

<110> Gregory J. Hinkle
 Jingdong Liu
 Linda T. Parker

<120> Novel Plant Transcribed Regions and Uses Thereof

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Cys	Val	Ser	Ser	Ile	Ser	Asp	His	Leu	Asp	Thr	Gly	Ser	His	Ser	Glu	
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Cys Pro Cys Val Ala Asp Leu Lys Asn Gly Pro Cys Gly Gly Gln Phe
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gtc gat gca ttt tcc tgc ttt ctc agg agc aga gaa gaa gag aag gga   410
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Ser Asp Cys Val Lys Pro Phe Ile Thr Leu Gln Asp Cys Ile Lys Ala
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Asn Pro Glu Ala Phe Ser Lys Glu Ile Leu Glu Glu Glu Glu Asn Asp
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Arg Glu Ser Lys Pro Lys Val
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Met Gly Lys Ala Lys Lys Gly Pro Lys Phe Ala
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Val Met Lys Lys Ile Val Thr Ser Lys Ala Ile Lys Ser Tyr Lys Glu
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Glu Val Leu Asn Pro Glu Lys Lys Asn Leu Met Lys Glu Lys Leu Pro
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Arg Asn Val Pro Thr His Ser Ser Ala Leu Phe Phe Gln Tyr Asn Thr
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Ala Leu Gly Pro Pro Tyr Arg Val Leu Val Asp Thr Asn Phe Ile Asn
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Phe Ser Ile Gln Asn Lys Leu Asp Leu Glu Lys Gly Met Met Asp Cys
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Leu Tyr Ala Lys Cys Thr Pro Cys Ile Thr Asp Cys Val Met Ala Glu
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Val Gly Ala Leu Ala Phe Asp Asp Val Ser Val Ala Val Asp Phe Leu	
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Met Glu Val Phe Gly Lys Ser Val Ile Ala Glu Pro Ser Asn	
1 5 10	
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Val Ile Phe Leu Ser Ala Ile Leu Asn Thr Glu Gly Ser Asn Pro Ser	
15 20 25 30	
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His Lys Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met	

35									40				45					
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atc	cgc	agg	aag	cat	gaa	gtg	gac	agc	agt	gaa	ggc	tgc	tgc	ttt	aag	577		
Ile	Arg	Arg	Lys	His	Glu	Val	Asp	Ser	Ser	Glu	Gly	Cys	Cys	Phe	Lys			
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cgc	agg	cgc	ggc	gca	cag	ctg	cat	cct	tcc	ccc	ttc	gag	agg	tcc	tac	625		
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Ser	Ala	Val	Tyr	Pro	Ile	Pro	Ser	Gln	Val	Gly	Asp	Gly	Met	Asp	Met			
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Ser																		
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Ser Leu Leu Cys Leu Leu His Arg Ala Ile Pro Asp Gly Ala Lys Ser	
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Phe Glu Thr Val Asp Ser Leu Ser Val Phe Arg Ala Lys Asn Tyr Asp	
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gcc acc atc gag ttc tac tgg gcg ccg atg ctg gcc gag tcc aac tcc	710
Ala Thr Ile Glu Phe Tyr Trp Ala Pro Met Leu Ala Glu Ser Asn Ser	
160 165 170	
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Asp Asp Ala Val Val His Ser Ala Asp Asp Arg Leu Ile Arg Gly Ala	
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Pro Met Asp Arg His Tyr Ser Phe Trp Lys Gly Ala Asp Val Leu Val	
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Phe Asn Ser Tyr Leu Trp Trp Val Ala Gly Asp Lys Ile Gln Ile Leu	
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Arg Gly Ala Asp Asn Asp Pro Ser Lys Asp Ile Val Glu Met Lys Ser	
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gag gag gcc tac cgg ctg gtg ctg cac cag gtg gtc cgg tgg ctg gag	950
Glu Glu Ala Tyr Arg Leu Val Leu His Gln Val Val Arg Trp Leu Glu	
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Arg Asn Val Asp Pro Gly Lys Ser Arg Val Phe Phe Val Thr Ala Ser	
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Pro Thr His Thr Asp Gly Arg Ala Trp Gly Asp Asp Asp Ala Glu Gly	
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Ser Ser Asn Cys Tyr Asn Gln Thr Ser Pro Ile Ser Ala Ala Ser Ser	
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Tyr Arg Gly Gly Thr Ser Arg Glu Met Leu Arg Ala Thr Glu Glu Val	
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Leu Ala Thr Ser Arg Val Pro Val Gly Leu Val Asn Ile Thr Arg Leu	
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Ser Glu Tyr Arg Arg Asp Ala His Thr Gln Thr Tyr Lys Lys Gln Trp	
335 340 345	


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gacaacacga tgaaaaattg acgtccaaac atattaactt ctgcttgaaa agagggttgcc 512
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ctgaacataa tacttatggc tcgtaggttc gcttggtctcg acttagttta tttcaatttt 692
gttacgagct aagtttagtat tttagctcgg tttgttaacg agccatctcg ttagctcaaa 752
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cgg tcg gcg agg ccc gcg gtt cgg gcg agg gaa ccg gcc ggt ccg gtt 97
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             20            25            30

cag gtt acg atc ccg aaa ccc aaa gcg gcg gag gcg gaa ggc gcg aac 145
  Gln Val Thr Ile Pro Lys Pro Lys Ala Ala Glu Ala Glu Gly Ala Asn
             35            40            45

atc gtt ttg cag ccg cgg ttg tgc act ctg aga tcc tac ggt tcg gat 193
  Ile Val Leu Gln Pro Arg Leu Cys Thr Leu Arg Ser Tyr Gly Ser Asp
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cga gcg ggg gtt ctg atc aag gcc cgc aag gag ggt gac gat gat gac 241
  Arg Ala Gly Val Leu Ile Lys Ala Arg Lys Glu Gly Asp Asp Asp Asp
             65            70            75            80

gtg tcc ccc ttc ttc gcc gct ctt tcc gac tat att gag agc tct aag 289
  Val Ser Pro Phe Phe Ala Ala Leu Ser Asp Tyr Ile Glu Ser Ser Lys
             85            90            95

aaa agt cat gat ttt gag atc atc tct ggt cgt cta gct atg atg gtg 337
  Lys Ser His Asp Phe Glu Ile Ile Ser Gly Arg Leu Ala Met Met Val

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[illegible]

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Ser Glu Arg Glu Leu Gln Gly Asp Ala Thr Tyr Pro Leu Ser Glu Glu	
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aaa ggt ccc ttg gaa cct tct gtt cct gat cgg tat tgc gag ggc aga	288
Lys Gly Pro Leu Glu Pro Ser Val Pro Asp Arg Tyr Cys Glu Gly Arg	
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Phe Thr Ser His Thr Ser Gly Ser Asn Ser Leu Ser Pro Ser Cys Ser	
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caa agc tca aat tcc agc cat ggt tgt tcc agt ggt tcg aaa tca caa	384
Gln Ser Ser Asn Ser Ser His Gly Cys Ser Ser Gly Ser Lys Ser Gln	
115 120 125	
caa cat gtc agt gct cct caa ctt gca gta aag aaa gaa gtt ttc atg	432
Gln His Val Ser Ala Pro Gln Leu Ala Val Lys Lys Glu Val Phe Met	
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Glu Glu Asn Gln Ser Ser Thr Leu Leu Lys Ala Ala Ser His Ala Glu	
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Leu Gln Met Leu Pro Glu Glu Arg Leu Val Thr Leu Pro Arg Ser His	
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Ser Gln Val Leu Leu Ser Glu Gln Lys Pro Val Glu Asn Ile Thr Gly	
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atg caa atg tct aag cct gat tct ctc aag ata aaa gcc atg tac ggc	624
Met Gln Met Ser Lys Pro Asp Ser Leu Lys Ile Lys Ala Met Tyr Gly	
195 200 205	
gaa gaa aga tgt ata ttc cga ctg cag cct agt tgg gga ttt gaa aag	672
Glu Glu Arg Cys Ile Phe Arg Leu Gln Pro Ser Trp Gly Phe Glu Lys	
210 215 220	
cta aaa gaa gaa att cta aag cgg ttt ggc att gct cgg gag gtg tat	720
Leu Lys Glu Glu Ile Leu Lys Arg Phe Gly Ile Ala Arg Glu Val Tyr	
225 230 235 240	
gtg gac ctc aag tat ttg gat gat gaa tct gag tgg gtt ctt cta aca	768
Val Asp Leu Lys Tyr Leu Asp Asp Glu Ser Glu Trp Val Leu Leu Thr	
245 250 255	
tgc aac gca gac ctg ctt gag tgt att gat gtg tac aag tca tca agt	816
Cys Asn Ala Asp Leu Leu Glu Cys Ile Asp Val Tyr Lys Ser Ser Ser	
260 265 270	

act caa aca gta agg atc ttg gta cat tct agt gac cag taa 858
 Thr Gln Thr Val Arg Ile Leu Val His Ser Ser Asp Gln
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	Met	Arg	Ala	Met	Ser	
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10	15		20			
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25	30		35			
cac gag gag cgc ccc aag ggg tac ctc ttc aac cgg ccg ccg ccg cct His Glu Glu Arg Pro Lys Gly Tyr Leu Phe Asn Arg Pro Pro Pro Pro	798					
40	45		50			
ccg ggg gaa tct cgc aag tgg gag gat tgg gag ctg ccc tgc tac gtg Pro Gly Glu Ser Arg Lys Trp Glu Asp Trp Glu Leu Pro Cys Tyr Val	846					
55	60		65			
acc tcc ttc ctc acc gtc gtc atc ctc ggc gtc ggc ctc aac gcg aag Thr Ser Phe Leu Thr Val Val Ile Leu Gly Val Gly Leu Asn Ala Lys	894					
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90	95		100			
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gcagccccctt acatactctc tgcggactgc ggtccgcacc gcacgccatc tcagcaagac    180
gagagctcca ccgcgctggt cacttcttct gacgaagg atg gcg gga aaa gag gat    236
                               Met Ala Gly Lys Glu Asp
                               1                               5

gag aat gag aag cca tcg ttg gtg gca gcc ggc ggc aag caa gat cgg    284
Glu Asn Glu Lys Pro Ser Leu Val Ala Ala Gly Gly Lys Gln Asp Arg
                               10                               15                               20

aca gcg gcg acc acg gaa tcc ctt ccg caa agg acg aat ctt gag tgg    332
Thr Ala Ala Thr Thr Glu Ser Leu Pro Gln Arg Thr Asn Leu Glu Trp
                               25                               30                               35

gga aag gca gcg tgt agc gag gat gac atc cag aag tgt gta gct gcc    380
Gly Lys Ala Ala Cys Ser Glu Asp Asp Ile Gln Lys Cys Val Ala Ala
                               40                               45                               50

ggg gcc ttc cat ccc ggt gag ctg gtc gaa tgg cga gct ccc gtc aag    428
Gly Ala Phe His Pro Gly Glu Leu Val Glu Trp Arg Ala Pro Val Lys
55                               60                               65                               70

gat gag act ccg acg cta tcc acc atg gag gat cag ttt gtt atc ctg    476
Asp Glu Thr Pro Thr Leu Ser Thr Met Glu Asp Gln Phe Val Ile Leu
                               75                               80                               85

tct ctg acg cac ata att tgc ggt ctg agg gtc gat gcg agc gat ttc    524
Ser Leu Thr His Ile Ile Cys Gly Leu Arg Val Asp Ala Ser Asp Phe
                               90                               95                               100

ctg gtc agt gtg ctc gag tac tac aga ctt gag tgg tct cac ctg acg    572
Leu Val Ser Val Leu Glu Tyr Tyr Arg Leu Glu Trp Ser His Leu Thr
                               105                               110                               115

ccc aac tct att acg gcg ctg agc atc ttc gcc cac ctt tgt gag gcc    620
Pro Asn Ser Ile Thr Ala Leu Ser Ile Phe Ala His Leu Cys Glu Ala
                               120                               125                               130

tac gtg gag gcg cct cca act gtg gag gtc ttc acg cac ttc tac agc    668
Tyr Val Glu Ala Pro Pro Thr Val Glu Val Phe Thr His Phe Tyr Ser
135                               140                               145                               150

ctc tat cac aat agg aaa ggc gaa acg aca aca ctg ggc gcc gtc tac    716
Leu Tyr His Asn Arg Lys Gly Glu Thr Thr Thr Leu Gly Ala Val Tyr
                               155                               160                               165

ttc cgg ctc agg gac agg atg aag aag aat tat cca ttg tac tac ttg    764
Phe Arg Leu Arg Asp Arg Met Lys Lys Asn Tyr Pro Leu Tyr Tyr Leu

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Pro	Lys	Ser	Cys	Arg	Leu	Thr	Phe	Arg	Gly	Asp	Ile	Leu	Lys	Glu	Glu		
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aac	aat	tgg	aat	tgg	aaa	gat	ctt	ttg	cct	ctt	tcc	tgt	gag	cag	atg	908	
Asn	Asn	Trp	Asn	Trp	Lys	Asp	Leu	Leu	Pro	Leu	Ser	Cys	Glu	Gln	Met		
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Lys	Gln	Val	Gly	Gln	Ile	Met	Lys	Leu	Ser	Asn	Gln	Gly	Leu	Thr	Gly		
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Ala	Asp	Ile	Ile	His	Asp	Tyr	Leu	Lys	Arg	Arg	Ile	Ser	Pro	Leu	Arg		
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Arg	Arg	Met	His	Leu	Thr	Cys	Asn	Tyr	Ser	Gly	Leu	Ser	Asp	Pro	Thr		
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Arg	Asp	Ser	Asp	Lys	Asp	Leu	Ser	Val	Glu	Asp	Ile	Glu	Ser	Lys	Leu		
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Ser	Tyr	Leu	Leu	Asp	Leu	Lys	Arg	Met	Gly	Val	Lys	Gln	Pro	Thr	Gly		
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aga	ctg	gtc	aga	gca	tca	acc	aat	gac	caa	gcc	aat	cag	cct	cta	gac	1196	
Arg	Leu	Val	Arg	Ala	Ser	Thr	Asn	Asp	Gln	Ala	Asn	Gln	Pro	Leu	Asp		
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Leu	Leu	Asn	Val	Cys	Ser	Thr	His	Glu	Ala	Lys	Lys	Glu	Ala	Gln	Pro		
330					335					340							
caa	gtt	tgt	gcc	tcc	cta	cga	aga	tac	aca	agg	caa	tct	gct	ggg	ccc	1292	
Gln	Val	Cys	Ala	Ser	Leu	Arg	Arg	Tyr	Thr	Arg	Gln	Ser	Ala	Gly	Pro		
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Arg	Lys	Val	Ala	Val	Pro	Pro	Pro	Leu	Lys	Ile	Asp	Pro	Pro	Pro	Thr		
360					365					370							
caa	ggg	ccg	gcc	cca	gaa	gag	att	cta	gat	gcc	aca	aca	aac	ata	gcg	1388	
Gln	Gly	Pro	Ala	Pro	Glu	Glu	Ile	Leu	Asp	Ala	Thr	Thr	Asn	Ile	Ala		
375					380					385					390		
act	gca	gtt	tct	cca	aac	ctg	ggc	gta	gaa	caa	aaa	tct	ata	gag	cac	1436	
Thr	Ala	Val	Ser	Pro	Asn	Leu	Gly	Val	Glu	Gln	Lys	Ser	Ile	Glu	His		
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Glu	Asn	Ile	Glu	Glu	Trp	Gln	Lys	Lys	Asn	Asn	Ser	Pro	Ser	Leu	Val			
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Ser	Pro	Ala	Val	Asn	Gly	Asn	Leu	Ala	Val	Thr	Ala	Asn	Ser	Gly	Ala			
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Glu	Val	Val	Asn	Pro	Glu	Val	Glu	Tyr	Ile	Glu	Ser	Glu	Asn	Leu	Asn			
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gat	gta	gac	gat	att	gat	act	tgt	ctc	aag	acc	cta	tta	gct	gga	ctt	522		
Asp	Val	Asp	Asp	Ile	Asp	Thr	Cys	Leu	Lys	Thr	Leu	Leu	Ala	Gly	Leu			
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gac	tca	aag	gat	tgg	gtc	ctg	gtt	tgt	gac	aca	ctg	aat	aac	gta	cgt	570		
Asp	Ser	Lys	Asp	Trp	Val	Leu	Val	Cys	Asp	Thr	Leu	Asn	Asn	Val	Arg			
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cga	ttg	tct	ata	ttt	cat	aag	gaa	gca	atg	ctt	gat	atg	ctg	ggg	gat	618		
Arg	Leu	Ser	Ile	Phe	His	Lys	Glu	Ala	Met	Leu	Asp	Met	Leu	Gly	Asp			
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Cys	Lys	Thr	Ala	Ile	Met	Thr	Ser	Ala	Asp	Ile	Phe	Ser	Ala	Tyr	Asn			
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Leu	Gln	Pro	Tyr	Leu	Lys	Asn	Lys	Asn	Pro	Arg	Ile	Arg	Ala	Lys	Ala			
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Ser	Met	Cys	Phe	Ser	Arg	Ser	Val	Pro	Gln	Leu	Gly	Ala	Glu	Gly	Ile			
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Lys	Thr	Tyr	Gly	Ile	Asp	Lys	Leu	Ile	Gln	Val	Ala	Ala	Ser	Gln	Leu			

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245          250          255          260
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Ser Asp Gln Leu Pro Glu Ser Arg Glu Ala Ala Arg Thr Leu Leu Leu
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gag ctt caa aat gtg tat gag aaa tct cat gat ctc atc aag cca gct 1098
Glu Leu Gln Asn Val Tyr Glu Lys Ser His Asp Leu Ile Lys Pro Ala
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act cct act gtc aat aat gag cat act gtg aat gag gag aat cca gag 1146
Thr Pro Thr Val Asn Asn Glu His Thr Val Asn Glu Glu Asn Pro Glu
          295          300          305

gtg agt tct tgg gaa agc ttc tgt cag tca aaa ctt tct cct ctt agt 1194
Val Ser Ser Trp Glu Ser Phe Cys Gln Ser Lys Leu Ser Pro Leu Ser
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Ala Gln Ala Val Leu Arg Val Thr Thr Ser Ile Ala Arg Glu Gly Leu
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Val Ser

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ttgtcgtcga agcacgtatt gagcccaaga tttataatgt gtattctatt attttcccc 1411

tagctgttgt tacctatatt acttttgatt aatactacta ctactactag ataatggacc 1471

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caa gga aat atg cat gaa cct gct atc gac atg cct ttt gga agt gta 96
Gln Gly Asn Met His Glu Pro Ala Ile Asp Met Pro Phe Gly Ser Val
          20          25          30

ctt ctg caa gca ctg gtt tca agt gat gtc aat gga gat atg gag gca 144
Leu Leu Gln Ala Leu Val Ser Ser Asp Val Asn Gly Asp Met Glu Ala
          35          40          45

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tgt	tgc	aga	gca	tct	agc	gtt	ctt	tct	cac	att	gtc	aag	gac	aac	atg	192
Cys	Cys	Arg	Ala	Ser	Ser	Val	Leu	Ser	His	Ile	Val	Lys	Asp	Asn	Met	
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Ile	Phe	Asp	Ser	Gln	Phe	Val	Asn	Phe	Leu	Ser	Lys	Leu	Glu	Ala	Asp	
260265270																
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Ile Arg Glu Asn Ile Met Asp Ile Phe Ser Arg Thr Lys Thr Ala Thr
275 280 285

gca ctc ctt cct act gaa ttg gag cag aag aac ggg gag gtt gat gga 912
Ala Leu Leu Pro Thr Glu Leu Glu Gln Lys Asn Gly Glu Val Asp Gly
290 295 300

atg cag gac ttg ctg gct cga aac gca atg tta gca gaa gag tta gtg 1008
Met Gln Asp Leu Leu Ala Arg Asn Ala Met Leu Ala Glu Glu Leu Val
325 330 335

ggg cga gaa agg gtc cag atc gaa gcc ctg aga caa gaa ctg gag gga 1104
 Gly Arg Glu Arg Val Gln Ile Glu Ala Leu Arg Gln Glu Leu Glu Gly
 355 360 365

gcc gaa gct aac aac caa cga aac ctt gca gta aaa ctg gag tcc gat 1200
Ala Glu Ala Asn Asn Gln Arg Asn Leu Ala Val Lys Leu Glu Ser Asp
385 390 395 400

cgc ctg gat gcc gag gta aaa acc ttg cgg cag gga ggc agt gtg ccg 1296
Arg Leu Asp Ala Glu Val Lys Thr Leu Arg Gln Gly Gly Ser Val Pro
420 425 430

aag gac agt gag gcg gag ctg aac ggt ctg ctt gtc tgc ctc ggt cag 1392
Lys Asp Ser Glu Ala Glu Leu Asn Gly Leu Leu Val Cys Leu Gly Gln
450 455 460

gaa gat gtg gat gcc ctt ctg caa ggt att ggt gac gac act gcc att 1488
Glu Asp Val Asp Ala Leu Leu Gln Gly Ile Gly Asp Asp Thr Ala Ile
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505

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Gln Phe Lys Ile Asp Pro Gln Asp Phe Gln Asp Ser Glu Pro
1 5 10

gat att ctt gca aat tct gct tca tcg ata ata gaa cgg atc aaa gaa 218
Asp Ile Leu Ala Asn Ser Ala Ser Ser Ile Ile Glu Arg Ile Lys Glu
15 20 25 30

aac agt gat cag tgt gcc gcg gct ctc agg tcg ctc tgt cgc cgg aaa 266
 Asn Ser Asp Gln Cys Ala Ala Ala Leu Arg Ser Leu Cys Arg Arg Lys
 35 40 45

aag ggc ctc act gtc gag gag gca agc ttg att ggt gtt gac agc ctt 314
Lys Gly Leu Thr Val Glu Glu Ala Ser Leu Ile Gly Val Asp Ser Leu
50 55 60

ggt att gat gta aga gcc ttt tct ggc ttg gaa gtt aag act gtt cga 362
Gly Ile Asp Val Arg Ala Phe Ser Gly Leu Glu Val Lys Thr Val Arg
65 70 75

ttt tca ttc aat gca cag gcg ctc tct gaa cgt tca gct gaa aag aag 410
Phe Ser Phe Asn Ala Gln Ala Leu Ser Glu Arg Ser Ala Glu Lys Lys
80 85 90

atc agg cga atg ctt ttc ccc cgt taccagcgtgta aaaacgtgaa agcctctact 464
Ile Arg Arg Met Leu Phe Pro Arg
95 100

aagacaaggt gtcaagggaa tcaacacaat atcatcttat gcgagtttgc taggaqataq 584

atgggtctcta acatgcttcc aagaatatag tttggtttct gacagataat aaaaaaaaaa 704

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aca gaa gca gct cct tgg agg cag cag gaa aga agt gcc acc aat atc 96
Thr Glu Ala Ala Pro Trp Arg Gln Gln Glu Arg Ser Ala Thr Asn Ile
20 25 30

tgt cga gaa gct gaa ggg agg cca aga att gca tct gtc tat gct gat 144
Cys Arg Glu Ala Glu Gly Arg Pro Arg Ile Ala Ser Val Tyr Ala Asp
35 40 45

ata gag aga agg gtt ggg ggc ttc gac ttt tta gag tgt aat aac aag 192
Ile Glu Arg Arg Val Gly Gly Phe Asp Phe Leu Glu Cys Asn Asn Lys
50 55 60

gac ttc agg gct ctc aga ata ttg ggt gca ttg aac gcg aga gat gct 240
Asp Phe Arg Ala Leu Arg Ile Leu Gly Ala Leu Asn Ala Arg Asp Ala
65 70 75 80

aag aac aag aat gac agc agt ggc aga cca atg gct act cac aga aca 288
Lys Asn Lys Asn Asp Ser Ser Gly Arg Pro Met Ala Thr His Arg Thr
85 90 95

gga tat gac cta acc acc tct gga agc ttc cag gct cct att gtg gtc 336
Gly Tyr Asp Leu Thr Thr Ser Gly Ser Phe Gln Ala Pro Ile Val Val
100 105 110

atg aag cct gca gga acc act gaa aag cat ggg gtt tca ctt gct tct 384
Met Lys Pro Ala Gly Thr Thr Glu Lys His Gly Val Ser Leu Ala Ser
115 120 125

gtt gcc ccc ata gca ggc cta aga agc ctt aga aag ttg cca gct aga 432
Val Ala Pro Ile Ala Gly Leu Arg Ser Leu Arg Lys Leu Pro Ala Arg

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His	Leu	Arg	Met	Ser	Arg	Ala	Gln	Leu	Lys	Ser	Glu	Glu	Thr	Val	Ser	
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Ser	Ala	Asn	Ser	Pro	Arg	Pro	Thr	Ser	Ser	Ser	Ser	Pro	Arg	Asn	Val	
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Leu	Lys	Asn	Ala	Glu	Pro	Glu	Arg	Arg	Ser	Arg	Pro	Pro	Val	Ser	Pro	
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Lys	Ser	Pro	Ser	Lys	Lys	Ser	Asn	Glu	Val	Val	Ser	Pro	Lys	Gly	Arg	
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Thr	Arg	Ser	Lys	Pro	Ser	Gln	Val	Lys	Ser	His	Arg	Asp	Glu	Val	Leu	
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Gln	Ser	Thr	Gly	Asn	Arg	Ile	Ser	Leu	Ala	Lys	Gln	Val	Asp	Val	Ser	
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			260					265					270			
cca	agc	aat	gct	gct	gca	aca	gca	agt	cat	aag	gct	cct	tca	att	ctg	864
Pro	Ser	Asn	Ala	Ala	Ala	Thr	Ala	Ser	His	Lys	Ala	Pro	Ser	Ile	Leu	
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Asp	Ser	Asp	Gln	Asn	Ile	His	Ser	Leu	Asp	Asn	Ile	Pro	Ser	Pro	Val	
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Leu	Pro	Asp	Thr	Pro	Gln	Ser	Lys	Ala	Ser	Ser	Glu	Ala	Asn	Gln	Ile	
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 Ile His Cys Leu Ala Val Gln Met Leu Leu Leu Arg Cys Leu Leu Met
 20 25 30
 gat ctt gat cga caa aac act gga aag gct aca gtg cta ggt gat gct 144
 Asp Leu Asp Arg Gln Asn Thr Gly Lys Ala Thr Val Leu Gly Asp Ala
 35 40 45
 gcg cga gta ctg cga gat cta atc act caa gtg gaa tct ctc agg cag 192
 Ala Arg Val Leu Arg Asp Leu Ile Thr Gln Val Glu Ser Leu Arg Gln
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 gaa caa tct gct ctt gta tcg gag cgc caa tat gtc agt tcc gag aag 240
 Glu Gln Ser Ala Leu Val Ser Glu Arg Gln Tyr Val Ser Ser Glu Lys
 65 70 75 80
 aat gag ctg caa gag gag aac agt tcg ctc aag tcc caa ata tcg gaa 288
 Asn Glu Leu Gln Glu Glu Asn Ser Ser Leu Lys Ser Gln Ile Ser Glu
 85 90 95
 cta caa acc gag ctc tgc gca agg atg agg agc agc agc ctg agc caa 336
 Leu Gln Thr Glu Leu Cys Ala Arg Met Arg Ser Ser Ser Leu Ser Gln
 100 105 110
 acc agc atc ggg atg tcg gat ccg gca act cac cag cag atg cag atg 384
 Thr Ser Ile Gly Met Ser Asp Pro Ala Thr His Gln Gln Met Gln Met
 115 120 125
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 Trp Ser Ser Ile Pro His Leu Ser Ser Val Ala Met Ala Ala Arg Pro
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 gca agt gca gcg tcc ccg ttg cac ggc cag gag ggc tac tct gct gac 480
 Ala Ser Ala Ala Ser Pro Leu His Gly Gln Glu Gly Tyr Ser Ala Asp
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Ala Gly Gln Ala Gly Tyr Ala Pro Gln Pro Gln Pro Arg Glu Leu Gln
165 170 175

ctc ttt ccg ggg tca tcg gca tcg tct tca ccg gag cgt gaa cgt tct 576
Leu Phe Pro Gly Ser Ser Ala Ser Ser Ser Pro Glu Arg Glu Arg Ser
180 185 190

tcc cgg ctc gga agc ggc cag gcc acg cgg ccg agc ctg aca gat tcc 624
Ser Arg Leu Gly Ser Gly Gln Ala Thr Arg Pro Ser Leu Thr Asp Ser
195 200 205

ttg ccg ggt cag ctc tgc ctg agc ctc cta cag cca tct cag gaa gca 672
Leu Pro Gly Gln Leu Cys Leu Ser Leu Leu Gln Pro Ser Gln Glu Ala
210 215 220

agc ggc ggc ggc ggc ggc gtc atg tcg cgc agc aga gag gaa cgg 720
 Ser Gly Gly Gly Gly Gly Gly Val Met Ser Arg Ser Arg Glu Glu Arg
 225 230 235 240

cgg gac ggg tag ccaactgaca gacaacgcac ttgaatcggg gtgtgtggcg 772
Arg Asp Gly

gcggcgattg tcctgtaa at accaagaatt ccgtcccttt actggctcgt tcatccagaa 832

cta atgctgg tagctgccct gtgttgagcg gcagctctgc ttgttctaga agcttctgag 892

aacatgtgtg ggctatgttt tccatgagat tgtaagatgt gaggtggagc cgctagaaca 952

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Leu Ile Leu Leu Gln Thr Arg Gly Ile Gly Ala Leu His Lys Glu Leu	
20 25 30	

cga aaa gcg tgt gct ttg act ggc agc agt gat ccg tgc tac atc gaa 143
Pro Lys Ala Cys Ala Leu Thr Gly Ser Ser Asp Pro Cys Tyr Ile Glu
35 40 45

gca tat cat ttg gca gat cca act gat ggc aga att acc cta cat cta	191
Ala Tyr His Leu Ala Asp Pro Thr Asp Gly Arg Ile Thr Leu His Leu	
50 55 60	
aag att tta aat ttg act gag ctg gaa ctc aac agg gtg gac atc cgt	239
Lys Ile Leu Asn Leu Thr Glu Leu Glu Leu Asn Arg Val Asp Ile Arg	
65 70 75	
ggt ggc ctg tct gga gca ctg tat tat atg gat ggt ttc tct cgc act	287
Val Gly Leu Ser Gly Ala Leu Tyr Tyr Met Asp Gly Phe Ser Arg Thr	
80 85 90 95	
ggt cgt cac ctt cgg aat ctt gtt tcc cag gat cca gtc caa agt agt	335
Val Arg His Leu Arg Asn Leu Val Ser Gln Asp Pro Val Gln Ser Ser	
100 105 110	
gtg act gtt gga gtt tca cat ttt gag aga tgc tcg ctc tgg gtt caa	383
Val Thr Val Gly Val Ser His Phe Glu Arg Cys Ser Leu Trp Val Gln	
115 120 125	
ggt ttg tat tac ccg ttt tat gga agt agt gga tca aca gac tat gaa	431
Val Leu Tyr Tyr Pro Phe Tyr Gly Ser Ser Gly Ser Thr Asp Tyr Glu	
130 135 140	
gga gat tat gca gaa gag gat tca cag atg atg agg cag aag cgc tca	479
Gly Asp Tyr Ala Glu Glu Asp Ser Gln Met Met Arg Gln Lys Arg Ser	
145 150 155	
cat cgg cct gaa ctt ggg gaa ccg gtt gtt ttg cgg tgc caa cca tac	527
His Arg Pro Glu Leu Gly Glu Pro Val Val Leu Arg Cys Gln Pro Tyr	
160 165 170 175	
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Lys Phe Pro Leu Ala Glu Leu Leu Leu Pro Leu Glu Cys Ser Pro Val	
180 185 190	
gag tat ttc cgg cta tgg cct agc cta cca gcc atg gtg gag tgc act	623
Glu Tyr Phe Arg Leu Trp Pro Ser Leu Pro Ala Met Val Glu Cys Thr	
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Gly Thr Tyr Thr Tyr Glu Gly Ser Gly Phe Lys Ala Thr Ala Ala Gln	
210 215 220	
cag tat gac agc tct ccc ttc ctc agt gga ttg aag tcg att tct tct	719
Gln Tyr Asp Ser Ser Pro Phe Leu Ser Gly Leu Lys Ser Ile Ser Ser	
225 230 235	
aag ccc ttc cat caa gtc tgc tca cat ttc atc cgg aca gta gct gga	767
Lys Pro Phe His Gln Val Cys Ser His Phe Ile Arg Thr Val Ala Gly	
240 245 250 255	
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Phe Gln Leu Cys Tyr Ala Ala Lys Thr Trp Phe Gly Gly Phe Val Gly	
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Ala Gly Ala Gly Leu Pro Val His Met Lys Gly Glu Leu Asn Thr Ala	
20 25 30	
ttc ata gga ctg ggg gat gac ggt gga tat ggt ggt ggc tgg gtt cct	144
Phe Ile Gly Leu Gly Asp Asp Gly Gly Tyr Gly Gly Trp Val Pro	
35 40 45	
ttg gca gct ctt aaa aag gtg ctg aga ggg atc cta aag tac ctc gga	192
Leu Ala Ala Leu Lys Lys Val Leu Arg Gly Ile Leu Lys Tyr Leu Gly	
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gtt cta tgg ttg ttt gca caa ttg cct gaa ctt ttg aaa gaa ata cta	240
Val Leu Trp Leu Phe Ala Gln Leu Pro Glu Leu Lys Glu Ile Leu	
65 70 75 80	
gga tca atc tta aag gac aat gaa ggt gct ctc ttg aat ttg gat caa	288
Gly Ser Ile Leu Lys Asp Asn Glu Gly Ala Leu Leu Asn Leu Asp Gln	
85 90 95	
gag cag cct gca ctc cgg ttc tat gtc gga gga tat gta ttt gca gta	336
Glu Gln Pro Ala Leu Arg Phe Tyr Val Gly Gly Tyr Val Phe Ala Val	
100 105 110	
agt gtc cat cgg gtt caa ctg ctt cta caa gtt ttg agt gtg aaa aga	384
Ser Val His Arg Val Gln Leu Leu Leu Gln Val Leu Ser Val Lys Arg	
115 120 125	
ttt cac cac cag caa cag cag cag cag gct caa agc aat gct cag gaa	432
Phe His His Gln Gln Gln Gln Gln Ala Gln Ser Asn Ala Gln Glu	
130 135 140	
gag cta gca gca gtt gaa atc aat gaa ata tgt gac tac ttt agc aga	480
Glu Leu Ala Ala Val Glu Ile Asn Glu Ile Cys Asp Tyr Phe Ser Arg	
145 150 155 160	
cgt gtt gcc tcc gaa cca tat gat gct tct aga gtt gct tct ttt atc	528
Arg Val Ala Ser Glu Pro Tyr Asp Ala Ser Arg Val Ala Ser Phe Ile	
165 170 175	
act ttg ctt aca ttg cca att ttg gtt ctg cgc gag ttt tta aag ctg	576
Thr Leu Leu Thr Leu Pro Ile Leu Val Leu Arg Glu Phe Leu Lys Leu	
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Ile Thr Trp Lys Lys Gly Leu Ser Pro Val His Gly Asp Ile Ala Thr	

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Ala	Gln	Arg	Ala	Arg	Ile	Glu	Leu	Cys	Leu	Glu	Asn	His	Ser	Gly	Ser		
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Ala	Ser	Ser	Asp	Asn	Thr	Glu	Asn	Ser	Ser	Leu	Ala	Lys	Ser	Asn	Ile		
225					230					235					240		
cat	cat	gat	aga	gcc	cac	agt	tca	gta	gaa	ttt	gcc	ctg	aca	ttt	gta	768	
His	His	Asp	Arg	Ala	His	Ser	Ser	Val	Glu	Phe	Ala	Leu	Thr	Phe	Val		
				245					250					255			
ctt	gac	cat	gct	ctt	att	cct	cac	atg	aat	gta	gct	gga	gga	gct	gcc	816	
Leu	Asp	His	Ala	Leu	Ile	Pro	His	Met	Asn	Val	Ala	Gly	Gly	Ala	Ala		
			260					265					270				
tgg	ctt	cca	tat	tgt	gta	tct	gtg	aaa	ctt	cgc	tat	tct	ttt	ggg	gac	864	
Trp	Leu	Pro	Tyr	Cys	Val	Ser	Val	Lys	Leu	Arg	Tyr	Ser	Phe	Gly	Asp		
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aac	aat	cat	ata	gct	ttc	ctt	gct	atg	aat	ggg	agc	cat	ggg	ggg	aga	912	
Asn	Asn	His	Ile	Ala	Phe	Leu	Ala	Met	Asn	Gly	Ser	His	Gly	Gly	Arg		
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Ala	Cys	Trp	Leu	Gln	Phe	Glu	Glu	Trp	Glu	Arg	Cys	Lys	Gln	Lys	Val		
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tca	aga	gct	gtg	gaa	act	gtg	aat	ggg	tct	ggg	gta	gct	gga	gag	gta	1008	
Ser	Arg	Ala	Val	Glu	Thr	Val	Asn	Gly	Ser	Gly	Val	Ala	Gly	Glu	Val		
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ggc	caa	gga	agg	ctg	cga	atg	ggt	gca	gag	atg	atc	caa	aag	cag	ctt	1056	
Gly	Gln	Gly	Arg	Leu	Arg	Met	Val	Ala	Glu	Met	Ile	Gln	Lys	Gln	Leu		
			340					345					350				
caa	ctc	tgt	cta	caa	cag	cta	aga	gat	gac	cca	ctt	tct	gca	ggc	tct	1104	
Gln	Leu	Cys	Leu	Gln	Gln	Leu	Arg	Asp	Asp	Pro	Leu	Ser	Ala	Gly	Ser		
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act	gca	tca	tga	acttgcttgg	aatgagctct	atcaaggcca	ttgatgtctg									1156	
Thr	Ala	Ser															
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tcataattcag	catggccttt	ggctttgtta	acgtgtagat	gtgaaggaat	acacatttgg											1216	
tagcagtgac	agtttcgcct	gaggcttgct	cagatgacaa	ttttgtacag	tataaatggg											1276	
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atttttggat	tcgttatcat	ctttcttctg	tctgtactat	gttaat													

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gacgtcttag tattagcagg acatctctag ttgtgttcag agtgattgga ccc 1629

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cca ggt gaa act gca caa tcg atc gat gcc ccc aag aca ttc tgt gat 95
Pro Gly Glu Thr Ala Gln Ser Ile Asp Ala Pro Lys Thr Phe Cys Asp
20 25 30

tca ggg gag acg ggt aga cta tgt gga agt tca aca tgc ttt agt tgc 143
Ser Gly Glu Thr Gly Arg Leu Cys Gly Ser Ser Thr Cys Phe Ser Cys
35 40 45

aac aat ata cga gaa atg cag gct cag aaa gtc aga gga aca ctt ttg 191
Asn Asn Ile Arg Glu Met Gln Ala Gln Lys Val Arg Gly Thr Leu Leu
50 55 60

ata cca tgc cga aca gca atg aga gga agc ttc cca ctt aat ggg acg 239
Ile Pro Cys Arg Thr Ala Met Arg Gly Ser Phe Pro Leu Asn Gly Thr
65 70 75

tat ttt caa gtt aat gag gta ttt gct gac cat tgc tca agt caa aat 287
Tyr Phe Gln Val Asn Glu Val Phe Ala Asp His Cys Ser Ser Gln Asn
80 85 90 95

cca att gat gtc cca cga agt tgg att tgg gac ctc cca aga cga act 335
Pro Ile Asp Val Pro Arg Ser Trp Ile Trp Asp Leu Pro Arg Arg Thr
100 105 110

gtt tac ttt gga acc tca gtt cct aca ata ttc aga ggt tta acg act 383
Val Tyr Phe Gly Thr Ser Val Pro Thr Ile Phe Arg Gly Leu Thr Thr
115 120 125

gaa gag ata caa cga tgc ttt tgg aga gga ttt gtt tgc gtg agg ggc 431
Glu Glu Ile Gln Arg Cys Phe Trp Arg Gly Phe Val Cys Val Arg Gly
130 135 140

ttt gat agg aca gtg agg gca cca agg ccc ctt tat gca agg ttg cat 479
Phe Asp Arg Thr Val Arg Ala Pro Arg Pro Leu Tyr Ala Arg Leu His
145 150 155

caa tct ggg agg atg tat tac ctc aac cgg aag acg ctg aag aag agc 335
Gln Ser Gly Arg Met Tyr Tyr Leu Asn Arg Lys Thr Leu Lys Lys Ser
100 105 110

tgg	gtc	aga	ccc	cag	gtg	cag	agc	gtg	aac	ctg	gac	ctc	aac	atc	tcc	383
Trp	Val	Arg	Pro	Gln	Val	Gln	Ser	Val	Asn	Leu	Asp	Leu	Asn	Ile	Ser	
			115					120					125			

acg gct gcc gcc atc gac aac tgt gcc gcc aac ggt gct gct gcc gct 431
Thr Ala Ala Ile Asp Asn Cys Ala Ala Asn Gly Ala Ala Ala Ala
130 135 140

gct tcc gac gac gag gac gag cca agg aaa ccc gct ggc act ttg ttc 479
Ala Ser Asp Asp Glu Asp Glu Pro Arg Lys Pro Ala Gly Thr Leu Phe
145 150 155

tct gga ggc agc atg gtg gcc gtg ccg tgc gcc aac tgc cat ctc cta 527
Ser Gly Gly Ser Met Val Ala Val Pro Cys Ala Asn Cys His Leu Leu
160 165 170 175

gtc atg ctg tgc aag tcc tcc ccg tcc tgc ccc aac tgc aag ttc gtg 575
Val Met Leu Cys Lys Ser Ser Pro Ser Cys Pro Asn Cys Lys Phe Val
180 185 190

cag cct ctg gca cct gct gtg ccg cct gcg gcg gtg gcc cat tgg agg 623
Gln Pro Leu Ala Pro Ala Val Pro Pro Ala Ala Val Ala His Trp Arg
195 200 205

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atc gat gcc gcc gtc aag cgc ctg gag acc ctg agc ctt ctc cat tag      671
Ile Asp Ala Ala Val Lys Pro Leu Glu Thr Leu Ser Leu Leu His
      210                      215                      220

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gcacatgcac ttcaccggca gcagattgta gaaaggaaat cgtagttacg tagtagtggt 731

qcatgggtta gtattactat tacctgggta atgcatgagc ggtcgaatga aaattggaaa 791

tgtgaaacta ccgtgcatgc atggtgacat gacaaaatac aaaatgggtga agccagcctc 851

aaattaaact gc 863

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ggctggaccg caacccaatt ggggggtaat tgggattgct actccgcggc tgcctgtccc 180

210	215	220	
ctc cct gac gac gcc atg tcc gcg tgc ccg tgc acg ccc ggg gcg agg			960
Leu Pro Asp Asp Ala Met Ser Ala Cys Pro Cys Thr Pro Gly Ala Arg			
225	230	235	240
gac ggg gag gac gac gac gcg gcg ggc gtg cac ggg ctg gag ctg gag			1008
Asp Gly Glu Asp Asp Asp Ala Ala Gly Val His Gly Leu Glu Leu Glu			
	245	250	255
gcg tac ggg tcg act atg cgg gcg ctg tac gcg tcg ggg ccg ctg acg			1056
Ala Tyr Gly Ser Thr Met Arg Ala Leu Tyr Ala Ser Gly Pro Leu Thr			
	260	265	270
tgg gag cag gag gcg ctg ctg acg aac ctg cgc ctg tcg ctc aac atc			1104
Trp Glu Gln Glu Ala Leu Leu Thr Asn Leu Arg Leu Ser Leu Asn Ile			
	275	280	285
tcc aac gag gag cat ctg ctc cag ctc agg cgc cta ctg tcc tcg tga			1152
Ser Asn Glu Glu His Leu Leu Gln Leu Arg Arg Leu Leu Ser Ser			
	290	295	300
ttattggcac ttggcattgg cgcattgccca gccaccaccc ttctggcctt ctctttcgta			1212
cgtctccagc gtcgtcgtcg gccaacggcc atgcacgtcg gcttgggtcg cggaacgcgcg			1272
cgttcagcga gcctcttctgct tttactcttg ttgctaattg ctattacatg gttctctgtc			1332
tagtctaggt agaaagaatc ctatgttcat accagtgtcg agacatgtca tgccttttgt			1392
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tgg agt cat cgc cgc cgg gcc ggt cgc ggt cgg atc ccc ccg ctc cgc			96
Trp Ser His Arg Arg Arg Ala Gly Arg Gly Arg Ile Pro Pro Leu Arg			
	20	25	30
ctc ctc tcc ttc gat tcg ttg ctt ccc gct tca aat cca agc cac cac			144
Leu Leu Ser Phe Asp Ser Leu Leu Pro Ala Ser Asn Pro Ser His His			
	35	40	45
cct ttc ctt ccc atg gct tcc gac gcc ccg gcg gag caa ccg gcg acg			192

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Gln	Gln	Lys	Pro	Thr	Arg	Val	Ser	Leu	Ser	Tyr	Glu	Glu	Ile	Ser	Lys		
65					70				75						80		
ctc	ttc	tcc	ctc	ccc	atc	gct	gag	gcg	gcc	tcc	atc	ctc	gga	gtc	tgc	288	
Leu	Phe	Ser	Leu	Pro	Ile	Ala	Glu	Ala	Ala	Ser	Ile	Leu	Gly	Val	Cys		
				85					90					95			
acc	agt	gtc	ttg	aag	agg	atc	tgc	cgc	acc	cac	ggg	att	gtt	agg	tgg	336	
Thr	Ser	Val	Leu	Lys	Arg	Ile	Cys	Arg	Thr	His	Gly	Ile	Val	Arg	Trp		
			100					105					110				
cca	tat	cgt	aag	ctt	gtt	tct	ggg	aaa	gct	ggg	gat	gac	aca	aaa	ggt	384	
Pro	Tyr	Arg	Lys	Leu	Val	Ser	Gly	Lys	Ala	Gly	Asp	Asp	Thr	Lys	Gly		
			115				120					125					
cct	gat	agc	gac	aaa	gcc	aac	gaa	ctc	ctt	gag	gta	tca	aaa	atc	gcg	432	
Pro	Asp	Ser	Asp	Lys	Ala	Asn	Glu	Leu	Leu	Glu	Val	Ser	Lys	Ile	Ala		
	130					135					140						
aaa	caa	aag	gct	ccc	agt	gca	tca	ggc	cca	tca	gta	gtg	tca	tca	agc	480	
Lys	Gln	Lys	Ala	Pro	Ser	Ala	Ser	Gly	Pro	Ser	Val	Val	Ser	Ser	Ser		
145					150				155						160		
act	tcc	caa	gga	gcg	gca	aag	tct	caa	cag	ggc	aat	tct	aag	gca	gga	528	
Thr	Ser	Gln	Gly	Ala	Ala	Lys	Ser	Gln	Gln	Gly	Asn	Ser	Lys	Ala	Gly		
				165					170					175			
cag	ttt	tca	gtt	tcg	cca	cca	aca	ggc	aaa	cat	aac	gca	tca	cta	agt	576	
Gln	Phe	Ser	Val	Ser	Pro	Pro	Thr	Gly	Lys	His	Asn	Ala	Ser	Leu	Ser		
			180					185					190				
ttg	acc	cat	agc	caa	gcc	aag	gcc	atc	cct	tgc	tat	atg	gat	gat	ttc	624	
Leu	Thr	His	Ser	Gln	Ala	Lys	Ala	Ile	Pro	Cys	Tyr	Met	Asp	Asp	Phe		
			195				200					205					
aag	tac	gga	ttc	ccg	tca	tct	ggc	ttg	tct	tgt	gaa	act	atg	aaa	tgg	672	
Lys	Tyr	Gly	Phe	Pro	Ser	Ser	Gly	Leu	Ser	Cys	Glu	Thr	Met	Lys	Trp		
	210					215					220						
tgg	ggc	aca	agc	agc	gac	aca	gac	tat	gtg	cct	acc	aaa	gat	gga	agc	720	
Trp	Gly	Thr	Ser	Ser	Asp	Thr	Asp	Tyr	Val	Pro	Thr	Lys	Asp	Gly	Ser		
225					230				235					240			
cat	gaa	ccc	cat	gaa	tca	aca	aca	cat	gag	cca	tca	aag	ggc	atg	act	768	
His	Glu	Pro	His	Glu	Ser	Thr	Thr	His	Glu	Pro	Ser	Lys	Gly	Met	Thr		
				245					250					255			
gat	gat	gac	gag	ttg	gac	tgg	gga	gca	gat	gaa	gcg	gaa	gct	gaa	gct	816	
Asp	Asp	Asp	Glu	Leu	Asp	Trp	Gly	Ala	Asp	Glu	Ala	Glu	Ala	Glu	Ala		
			260				265						270				
gat	ggc	act	gtt	acg	gca	gag	gca	tcg	gca	cag	ctg	tgc	tcg	ctg	aga	864	
Asp	Gly	Thr	Val	Thr	Ala	Glu	Ala	Ser	Ala	Gln	Leu	Cys	Ser	Leu	Arg		

275	280	285	
agg aaa gca gta gat gac ggg cgc aaa cta ttg aat ggt cac aac cgc			912
Arg Lys Ala Val Asp Asp Gly Arg Lys Leu Leu Asn Gly His Asn Arg			
290	295	300	
agg ggc caa gaa ttc tct agg ctg aac aaa agg cag aag aca gcg cta			960
Arg Gly Gln Glu Phe Ser Arg Leu Asn Lys Arg Gln Lys Thr Ala Leu			
305	310	315	320
gcc cag gta ttt ggg gct tca ctg cca gaa tgt tgt att act cgt gtc			1008
Ala Gln Val Phe Gly Ala Ser Leu Pro Glu Cys Cys Ile Thr Arg Val			
	325	330	335
tag tgagtgaaga acaactgtag ctgtgttttc cctcctttctc cagaccctca			1061
tgtaatctga cccgttatta gcgagaagtg tgaaatcttc tcaactgaatt gaagaatggc			1121
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gat gcc ctg ggg cga aaa ttt acc cgc ttt gga cat caa gcc aag gaa			95
Asp Ala Leu Gly Arg Lys Phe Thr Arg Phe Gly His Gln Ala Lys Glu			
	20	25	30
gac agg cag gcc gcc att ttc cgg tct gag aat ggg aac gta tgg cag			143
Asp Arg Gln Ala Ala Ile Phe Arg Ser Glu Asn Gly Asn Val Trp Gln			
	35	40	45
gta aaa atc ttt ggt gaa gac aag acg ggc aag cgg tca ggg cag tat			191
Val Lys Ile Phe Gly Glu Asp Lys Thr Gly Lys Arg Ser Gly Gln Tyr			
	50	55	60
cta gca ccg aca ggc ata ggg gac gtg ccc tat ctg cca aca att ccc			239
Leu Ala Pro Thr Gly Ile Gly Asp Val Pro Tyr Leu Pro Thr Ile Pro			
	65	70	75
cgc cgg atc att ttg gcg atc gcc gaa aag cat ggg gtc aaa cca ccg			287
Arg Arg Ile Ile Leu Ala Ile Ala Glu Lys His Gly Val Lys Pro Pro			
	80	85	90
gaa gat ggt caa gat ttt tgg ccc tgg ttt gtg gat cat cct gag att			335

ccg agt ccc acc ccg agg cac gaa gcg agg agg ttc gag cag aag acg	263
Pro Ser Pro Thr Pro Arg His Glu Ala Arg Arg Phe Glu Gln Lys Thr	
35 40 45	
gac agg ttc tgg gag tac cag gag cag agc aat acc tgg gta caa gta	311
Asp Arg Phe Trp Glu Tyr Gln Glu Gln Ser Asn Thr Trp Val Gln Val	
50 55 60 65	
cgc gcg ccg ttc gac ctc atg tcc tgc atc aac ggc acc tgc aca aag	359
Arg Ala Pro Phe Asp Leu Met Ser Cys Ile Asn Gly Thr Cys Thr Lys	
70 75 80	
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Gln Gly Asp Gly Ala Glu Glu Asp Pro Val Leu Pro Val Arg Arg Arg	
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Ile Ser Leu Thr Arg Met Ser Glu Ser Ser Val Trp Val Thr Gly Gln	
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Ser Gly Ser Ile Tyr Glu Arg Phe Trp Asn Gly Val Val Trp Val Ile	
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Ala Pro His Glu Leu Pro Ala Ser Ala Gly Tyr Ala Thr Ala Thr Phe	
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Ile Val Asn Thr Thr Ile Leu Ala Leu Ser Glu Ala Gly Thr Leu Tyr	
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Gln Leu Gln Leu Asn Glu His Ala Gln Pro Ile Trp Thr Glu Met Ala	
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Phe Asn Ser Ser Gln Gln Ser Ala Asn Leu Gly Leu Lys Thr Gln Ser	
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Gln Ala Met Arg Ile Arg Asn Gly Ile Val Ser Asn Asp Gly Arg Lys	
230 235 240	
ctt ttc ctg tct atc atg aat gga tcc ctg ctt gag gta aca gaa att	887
Leu Phe Leu Ser Ile Met Asn Gly Ser Leu Leu Glu Val Thr Glu Ile	
245 250 255	

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tcg tat ata tct gat gct gga aat ctg cgg cca ggg acc ctg ttc aca Ser Tyr Ile Ser Asp Ala Gly Asn Leu Arg Pro Gly Thr Leu Phe Thr 275 280 285	983
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cgc ttg cat aga agg aag tgg aag tgg gac aaa cat gga gct cct acg Arg Leu His Arg Arg Lys Trp Lys Trp Asp Lys His Gly Ala Pro Thr 355 360 365	1223
ggg cag aga ctt agt tca att gca gaa gtt cag aag gat gaa ctt aat Gly Gln Arg Leu Ser Ser Ile Ala Glu Val Gln Lys Asp Glu Leu Asn 370 375 380 385	1271
gat gcg act tca atg ttt tta acg aca acc aca gga aaa gta tat gag Asp Ala Thr Ser Met Phe Leu Thr Thr Thr Gly Lys Val Tyr Glu 390 395 400	1319
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gga caa tgg ata aat cac atg tcc cct gag cat gca aag gtt gca aga Gly Gln Trp Ile Asn His Met Ser Pro Glu His Ala Lys Val Ala Arg 420 425 430	1415
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Lys	Tyr	Glu	Trp	Ser	Ile	Leu	Asp	Ala	Pro	Glu	Thr	Glu	Gly	Trp	Asn		
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cca	cct	tcc	agg	agg	cgt	aaa	gta	gaa	gag	aag	cag	cac	tac	cta	aat	1751	
Pro	Pro	Ser	Arg	Arg	Arg	Lys	Val	Glu	Glu	Lys	Gln	His	Tyr	Leu	Asn		
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Val	Asn	Arg	Tyr	Gln	Gln	Ser	Asp	Glu	Thr	Glu	Ser	Tyr	Asn	Phe	Leu		
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Ser	Arg	Thr	Ile	Asp	Leu	Asn	Phe	His	Met	Arg	Val	Met	His	Ala	Asp		
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Arg	Ser	Leu	Phe	Leu	Ile	Ala	Asp	Asn	Gly	Leu	Thr	Phe	Glu	Tyr	Leu		
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Asn	Ser	Asn	Gly	Val	Trp	Leu	Trp	Leu	Arg	His	Glu	His	Val	Thr	Ala		
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Val	His	Gly	Asn	Leu	His	Ile	Arg	Glu	Arg	Asn	Gly	Asp	Glu	Leu	Leu		
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tgg	att	aac	tgc	aca	gcg	atg	aag	aag	gga	aga	cag	gtt	gca	agt	ggg	2087	
Trp	Ile	Asn	Cys	Thr	Ala	Met	Lys	Lys	Gly	Arg	Gln	Val	Ala	Ser	Gly		
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Ser	Pro	Trp	Asp	Gly	Ile	Pro	Gly	Leu	Leu	Arg	Arg	Val	Thr	Thr	Asp		
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gat	gca	ctc	ttc	ttt	gtc	aac	aag	cga	ggc	agg	ctg	cta	cag	ttc	acg	2183	
Asp	Ala	Leu	Phe	Phe	Val	Asn	Lys	Arg	Gly	Arg	Leu	Leu	Gln	Phe	Thr		
		675				680					685						
gtt	gcg	ctg	cgg	aaa	ttc	aag	tgg	aag	gac	tgc	cac	agt	cct	cct	gac	2231	
Val	Ala	Leu	Arg	Lys	Phe	Lys	Trp	Lys	Asp	Cys	His	Ser	Pro	Pro	Asp		
		690			695				700						705		
acc	aag	att	gct	ttc	ata	gtg	gac	cag	gag	gtc	ttc	aga	aga	aac	atc	2279	
Thr	Lys	Ile	Ala	Phe	Ile	Val	Asp	Gln	Glu	Val	Phe	Arg	Arg	Asn	Ile		

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acg gag ctc tgg cac agg cac tac caa tca cct cac ctg ttc cta tcg Thr Glu Leu Trp His Arg His Tyr Gln Ser Pro His Leu Phe Leu Ser 740 745 750			2375
tgc tcc cca ggg acg gcc atg cgg cca tcg ccg ctg tcc ctg gcc ggc Cys Ser Pro Gly Thr Ala Met Arg Pro Ser Pro Leu Ser Leu Ala Gly 755 760 765			2423
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tgc ggc ggg tgg gag tgg gcg cgg att atc ggc acg ccg gcc agc gcc Cys Gly Gly Trp Glu Trp Ala Arg Ile Ile Gly Thr Pro Ala Ser Ala 915 920 925			2903
tgt atg acc agc tac tgg acg gcc gtc gcc acg tag ccgccgccgg Cys Met Thr Ser Tyr Trp Thr Ala Val Ala Thr 930 935 940			2949

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 Phe Gly His Pro Thr Asp Lys Gln Met Ile Glu Leu Asp Gln Ala Leu
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 Ser Gln Trp Asn Thr Asp Phe Asp Lys Val Pro Val Thr Lys Ile Ala
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 Phe Gly His Phe Pro Leu Ser Phe Ser Ala Leu Thr Glu Ser Gly Lys
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 Ser Ile Lys Asp Val Phe Leu Lys Gln Ser Leu Ala Ala Tyr Leu Cys
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ggg cat ctt cat aca agg ttc ggg aag aac ttg aaa cga tac tac cat 289
 Gly His Leu His Thr Arg Phe Gly Lys Asn Leu Lys Arg Tyr Tyr His
 85 90 95

cgg gca gtc cag gaa tca tca tta tca gag cat tac tac caa cat aac 337
 Arg Ala Val Gln Glu Ser Ser Leu Ser Glu His Tyr Tyr Gln His Asn
 100 105 110

atg cac caa gga gat gca ttc cag ggt aat aag gaa aac tgt tct gaa 385
 Met His Gln Gly Asp Ala Phe Gln Gly Asn Lys Glu Asn Cys Ser Glu
 115 120 125

gaa Glu	gct Ala	tct Ser	cat His	att Ile	gaa Glu	gag Glu	ttc Phe	tgg Trp	gaa Glu	tgg Trp	gag Glu	atg Met	ggg Gly	gat Asp	tgg Trp	433
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Met Ala Gly Ala Glu Gly Glu Arg Trp Val Gly Leu Ala Thr Asp
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Phe Ser Glu Gly Ser Arg Ala Ala Leu Arg Trp Ala Ala Ala Asn Leu
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ctg cga gcc gcc gac cac ctg ctg ctg ctg cac gtc atc aag gag ccc 323
Leu Arg Ala Gly Asp His Leu Leu Leu Leu His Val Ile Lys Glu Pro
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Asp Tyr Glu Gln Ser Glu Ala Ile Leu Trp Glu Ser Thr Gly Ser Pro
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80 85 90 95
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Thr Gln Lys Asp Ile Val Val Val Val Lys Val Leu Trp Gly Asp Pro
100 105 110
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Pro	Ser	Leu	Asn	Pro	Leu	Thr	Ser	Gly	Pro	Tyr	Gly	Leu	Ile	Phe	Ala	
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Ile	Phe	Gly	Leu	Ser	Phe	Ser	Asp	Lys	Ser	Phe	Val	Tyr	Leu	Ala	Gly	
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Asn	Asp	Gly	Ser	Ile	Pro	Ser	His	Gln	Ala	Arg	Gln	Ile	Glu	Asp	Ala	
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Leu	Gln	Gln														
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105 110 115

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Gln Leu Glu Asp Asp Lys Pro Glu Gln Ile Lys Ile Ala Ile Arg Pro
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Arg Gln Asn Lys Asn Ser Leu Asn Glu Ala Gly Arg Lys Ser Asn Pro
135 140 145

ctt aga agc gtg gaa gag aga aag gag gaa tat gat cgg gca cga gca 775
Leu Arg Ser Val Glu Glu Arg Lys Glu Glu Tyr Asp Arg Ala Arg Ala
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cgc att ttt agt agc tcc aga agt tgt gac tca gat gat act ctg tcc 823
Arg Ile Phe Ser Ser Ser Arg Ser Cys Asp Ser Asp Asp Thr Leu Ser
170 175 180

cag act ttt aca gat gag aaa aat tct ctt ata atc aag gat gag aat 871
Gln Thr Phe Thr Asp Glu Lys Asn Ser Leu Ile Ile Lys Asp Glu Asn
185 190 195

gaa act agc aag acc cct gtg gtt gat tca gaa caa tgc act gtt ggc 919
Glu Thr Ser Lys Thr Pro Val Val Asp Ser Glu Gln Cys Thr Val Gly
200 205 210

agg gat att agt tct act cga gtt gcc att ttg aga gat agg gaa aag 967
Arg Asp Ile Ser Ser Thr Arg Val Ala Ile Leu Arg Asp Arg Glu Lys
215 220 225

gac cgt agt gat cca gat tat gat cgt aac tat gga aga tat gct agg 1015
Asp Arg Ser Asp Pro Asp Tyr Asp Arg Asn Tyr Gly Arg Tyr Ala Arg
230 235 240 245

agt att cca att tct tcc ctt aac ttg atg cct ttt aat ttg caa caa 1063
Ser Ile Pro Ile Ser Ser Leu Asn Leu Met Pro Phe Asn Leu Gln Gln
250 255 260

gtt caa cct cca ttt gtg cag tat gac aat gct tta atc cgt tca gtc 1111
Val Gln Pro Pro Phe Val Gln Tyr Asp Asn Ala Leu Ile Arg Ser Val
265 270 275

aga tat cac aaa atc aag ctt cac ttg gct atg gac ctc ctc caa gcc 1159
Arg Tyr His Lys Ile Lys Leu His Leu Ala Met Asp Leu Leu Gln Ala
280 285 290

cta tga tgaatccttt tgggtgtcacg ggggtcaaato aggtgtctag ggatgggtgct 1215
Leu

tatgtacagt ggccaagtgc tgcaatgatg tatgcacatt catatgacca atttagacat 1275

gctgttttcc aggctccgat tgctcaacgc ccattgagtt tcgattattc acagaattac 1335

tagatgacgt ttagagggaa gttttccatt tggctgcaga tgttatttta gctattaagg 1395

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atttcagagt aagatacaat ttttctgtac tgttataata gacccttggt ttctattctg 1455
gtttttaagt tttgatggtg gtagtaagca ttcggtatct cctagtgaaa tttttatact 1515
ggactgtagt gaaagtactg gatttgaagt ctatgaagag ttatatgtgg ttaccttgtc 1575
caatgttaaa aaaaaaaaaa aaaaaa 1600

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<210>      39
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<212>      DNA
<213>      Zea mays

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<220>
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<400>      39

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Ala Arg Gly Ser Ala His Tyr Arg Thr Phe Trp Val Thr Asp Ser
1 5 10 15

cat tat tta aca gca acc ggg ccg gcg atc gcc ata ttt acc aac ccg 95
His Tyr Leu Thr Ala Thr Gly Pro Ala Ile Ala Ile Phe Thr Asn Pro
20 25 30

acc aaa caa ggc tat gac gac gga ctg ggc gaa aaa atc att ggc acg 143
Thr Lys Gln Gly Tyr Asp Asp Gly Leu Gly Glu Lys Ile Ile Gly Thr
35 40 45

ttt ggc aac tgt gct ggg gga aca acc ccc tgg ggg aca gtg tta agc 191
Phe Gly Asn Cys Ala Gly Gly Thr Thr Pro Trp Gly Thr Val Leu Ser
50 55 60

gca gag gaa aat ttc caa agc cag gtt cca gaa gca gtc tat gcc gat 239
Ala Glu Glu Asn Phe Gln Ser Gln Val Pro Glu Ala Val Tyr Ala Asp
65 70 75

ggc tcc gcc gta gat ccg gcc caa tgt ccg ctt aaa ata agt acc aac 287
Gly Ser Ala Val Asp Pro Ala Gln Cys Pro Leu Lys Ile Ser Thr Asn
80 85 90 95

ggg ttg agt ggc caa ggc aat gtg ttt ggc ttg gcg ggc aat aaa tat 335
Gly Leu Ser Gly Gln Gly Asn Val Phe Gly Leu Ala Gly Asn Lys Tyr
100 105 110

ggc tgg atg gta gaa att gac ccg gcc aat gcc aac gat tac ggc gtc 383
Gly Trp Met Val Glu Ile Asp Pro Ala Asn Ala Asn Asp Tyr Gly Val
115 120 125

aaa cat acg gcc ctt gga cgc ttt cgc cat gaa gct gtg gcg gtg cgg 431
Lys His Thr Ala Leu Gly Arg Phe Arg His Glu Ala Val Ala Val Arg
130 135 140

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320

35	40	45	
gac ttc ttg gag gac cct aat cag ccc gag aac gag ctg gtg agc ttg			193
Asp Phe Leu Glu Asp Pro Asn Gln Pro Glu Asn Glu Leu Val Ser Leu			
50	55	60	
ctg cag aac ctg gca gac atg gat gtt acc tac aac gca ctc cag gag			241
Leu Gln Asn Leu Ala Asp Met Asp Val Thr Tyr Asn Ala Leu Gln Glu			
65	70	75	80
act gac atc ggg cgg cag gtt aat ggt ctg cgc aag cat cct tcg gcc			289
Thr Asp Ile Gly Arg Gln Val Asn Gly Leu Arg Lys His Pro Ser Ala			
	85	90	95
gag gtc agg cgg ctg gtg aag cag ctc atc agg aag tgg aag gag ata			337
Glu Val Arg Arg Leu Val Lys Gln Leu Ile Arg Lys Trp Lys Glu Ile			
	100	105	110
gtg gac gac tgg gtg cgc ctg gac aat tcc ggc ggt gac ggc agt gcc			385
Val Asp Asp Trp Val Arg Leu Asp Asn Ser Gly Gly Asp Gly Ser Ala			
	115	120	125
tct gtt atg act gat ggt gac tcc cca cat aaa atc caa ggc aga agc			433
Ser Val Met Thr Asp Gly Asp Ser Pro His Lys Ile Gln Gly Arg Ser			
	130	135	140
cac caa agc cct cgg gtt tcg ggg ttt cag tat tct cca agc cca cag			481
His Gln Ser Pro Arg Val Ser Gly Phe Gln Tyr Ser Pro Ser Pro Gln			
	145	150	155
agg ttt aat ggt tca act tca gag atg gct aac aat ggg ttt gag tca			529
Arg Phe Asn Gly Ser Thr Ser Glu Met Ala Asn Asn Gly Phe Glu Ser			
	165	170	175
aca atg gat gcg aag cgt agg gcc agc cct gta cca gca cat cat aac			577
Thr Met Asp Ala Lys Arg Arg Ala Ser Pro Val Pro Ala His His Asn			
	180	185	190
tcc agg cag atg aac aac aat cat cat tct act act att acc acc agc			625
Ser Arg Gln Met Asn Asn Asn His His Ser Thr Thr Ile Thr Thr Ser			
	195	200	205
acg tca tct gct cca gct ttc tcg gtg cag aaa gtg aca agg gag caa			673
Thr Ser Ser Ala Pro Ala Phe Ser Val Gln Lys Val Thr Arg Glu Gln			
	210	215	220
aag cag agt ctt gtg gac ctt gac agg ctt gat tct gcc agg aag agg			721
Lys Gln Ser Leu Val Asp Leu Asp Arg Leu Asp Ser Ala Arg Lys Arg			
	225	230	235
ctc cag gag aat tac caa gaa gca caa aat gcc aaa aag cag agg aca			769
Leu Gln Glu Asn Tyr Gln Glu Ala Gln Asn Ala Lys Lys Gln Arg Thr			
	245	250	255
atc caa gtg atg gac atc aat gac ata cca aag ccg aag agc aga aac			817
Ile Gln Val Met Asp Ile Asn Asp Ile Pro Lys Pro Lys Ser Arg Asn			
	260	265	270

gct ttc atc cgc aag agc ggc agc ggt ggg ctc ccg gcg agg cac cga 865
Ala Phe Ile Arg Lys Ser Gly Ser Gly Gly Leu Pro Ala Arg His Arg
275 280 285

tag cctaacctcc ttcgtcggct ggatatctgc gacacttgcg aagttgtgcc 918

ctagaaccgc aacgggaaag aaaaagaagc aaacgggttc ttgttctttt tttccctgta 978

ccttgactgc ctaggtttac ctccagtgtgta atattgtcag gtacataagg gtgaaatgat 1038

atgatgtttc tcgaggaaaa agaaagaaat tagtcactgt ttttgctatg gtttggttgc 1098

tgttattgct gttggtcagt gctggatata atatgcataa aatgtatcaa gcctgcacac 1158

at 1160

<210> 44
<211> 63
<212> PRT
<213> Zea mays

<400> 44

Phe Cys Glu Cys Ile Phe Val Val Leu Gln Gln Gln Gly Pro Asp Tyr
1 5 10 15

Met Val Arg Asn Ala Arg Arg Ser Met Leu Glu Glu Leu Glu Gly Met
20 25 30

Leu Glu Ile Val Glu Pro Gln Pro Pro Gly Lys Pro Arg Thr Leu Ser
35 40 45

Arg Arg Arg Phe Asp Leu Pro Glu Gly Val Ala Ile Glu Lys Glu
50 55 60

<210> 45
<211> 473
<212> PRT
<213> Zea mays

<400> 45

Met Ala Lys Thr Pro Ser Phe Ala Val Ala Ala Val Ala Gly Gly Arg
1 5 10 15

Gly Pro Val His Asn Arg Thr Gln Leu Leu Leu Leu Leu Val Ala
20 25 30

Val Ala Ala Ser Ala Ser Thr Ala Gly Phe Leu Leu Arg Gly Ala Leu
35 40 45

Arg Asp Pro Cys Asp Gly Arg Gly Asp Pro Ala Ala Leu Asn Thr Ala
50 55 60

Arg Gly Glu Cys Phe Gly Arg Ile Thr Ile Glu Ala Met Ala Phe Lys
370 375 380

Leu Pro Val Leu Gly Thr Ala Ala Gly Gly Thr Thr Glu Ile Val Leu
385 390 395 400

Asp Gly Ser Thr Gly Leu Leu His Pro Ala Gly Lys Glu Gly Val Ala
405 410 415

Pro Leu Ala Lys Asn Ile Val Arg Leu Ala Ser His Ala Glu Gln Arg
420 425 430

Val Ser Met Gly Glu Lys Gly Tyr Gly Arg Val Lys Glu Met Phe Met
435 440 445

Glu His His Met Ala Glu Arg Ile Ala Ala Val Leu Lys Asp Val Leu
450 455 460

Arg Lys Ser Gln Glu His Ser Arg Ser
465 470

<210> 46
<211> 400
<212> PRT
<213> Zea mays

<400> 46

Pro Arg Val Arg Leu Ile Ile Glu Lys Asn Arg Asp Tyr Thr Val Asp
1 5 10 15

Tyr Ser Ser Ser Ser Phe Gly Leu Ser Gly Ala Ser Tyr Ile Ser Ser
20 25 30

Pro Met Arg Glu Thr Glu Gln Ser Lys Thr Ser Phe Asp Gln Phe Tyr
35 40 45

Ser Asn Ala Asn Phe Gln Leu Tyr Leu Ser Phe Cys Asn Phe Asp Lys
50 55 60

Ala Met Phe Leu Gly Phe Phe His Glu Leu Ser Glu Leu Pro Phe Glu
65 70 75 80

Leu Gln Arg Lys Ala Val Arg Asp Leu Lys Thr Ser Leu Ser Gly Glu
85 90 95

Asn Glu Ile Trp His Ser Met Val Tyr Asn Gly Phe Phe Glu Ala Phe
100 105 110

His Glu Phe Leu Lys Asn Asp Ser Gly Ile His Thr Leu Gln Ala Arg
115 120 125

Arg Ala Gly Ile Gln Phe Phe Leu Ala Phe Leu Ser Ser Gly Arg Ala
130 135 140

Arg Ile Pro Ser Val Cys Glu Asp Val Val Leu Leu Ile Ala Ser Leu

145		150		155		160
His Asp Ser Glu Phe Lys Gln Glu Ala Leu Leu Ile Val His Glu Leu						
	165			170		175
Leu Gln Glu Pro Ser Cys Pro Lys Ser Ser Leu Met Ala Ser Ile Leu						
	180			185		190
Ser Pro Ser Val Phe Gly Ala Leu Asp Ser Gly Glu Thr Lys Cys Leu						
	195			200		205
Asp Leu Ala Leu Gln Ile Ile Cys Lys Ile Ser Ser Asp Asn Asp Ile						
	210			215		220
Lys Ser Tyr Leu Leu Ser Ser Gly Ile Val Ser Arg Leu Ser Pro Leu						
	225			230		235
Leu Gly Glu Gly Lys Met Thr Glu Cys Ser Leu Lys Ile Leu Arg Asn						
	245			250		255
Leu Ser Asp Val Lys Glu Thr Ala Gly Phe Ile Ile Arg Thr Gly Asn						
	260			265		270
Cys Val Ser Ser Ile Ser Asp His Leu Asp Thr Gly Ser His Ser Glu						
	275			280		285
Arg Glu His Ala Val Val Ile Leu Leu Gly Val Cys Ser His Ser Pro						
	290			295		300
Glu Val Cys Ser Leu Ser Met Lys Glu Gly Val Ile Pro Ala Leu Val						
	305			310		315
Asp Leu Ser Val Ser Gly Thr Lys Val Ala Arg Asp Cys Ser Val Lys						
	325			330		335
Leu Leu Gln Leu Leu Arg Asn Phe Arg Arg Cys Asp Gln Phe Ser Ser						
	340			345		350
Ser Cys Ser Arg Glu Leu Ala Val Asp His Val Ser Glu Asn Thr Arg						
	355			360		365
Asn Gly Ser Ile Cys Met Gln Pro Ile Ser Lys Ser Ala Arg Tyr Ile						
	370			375		380
Ser Arg Lys Leu Asn Leu Phe Ser Lys Pro Arg Ser Leu Thr Leu Ala						
	385			390		395
						400

<210> 47
 <211> 149
 <212> PRT
 <213> Zea mays
 <400> 47

Met Gly Gln Ile Glu Ser Gln Val Thr Pro Pro Ala Glu Glu Pro Ser

1 5 10 15

Pro Pro Thr Val Glu Pro Ser Pro Ser Ser Pro Ala Pro Pro Pro Ser
 20 25 30

Ser Leu Glu Ala Ile Ala Ala Glu Ala Met Ser Phe Asp Glu Asp Asp
 35 40 45

Thr Glu Glu Ser Ile Asp Val Lys Val Gln Lys Ala Leu Asp Cys Pro
 50 55 60

Cys Val Ala Asp Leu Lys Asn Gly Pro Cys Gly Gly Gln Phe Val Asp
65 70 75 80

Ala Phe Ser Cys Phe Leu Arg Ser Arg Glu Glu Glu Lys Gly Ser Asp
 85 90 95

Cys Val Lys Pro Phe Ile Thr Leu Gln Asp Cys Ile Lys Ala Asn Pro
 100 105 110

Glu Ala Phe Ser Lys Glu Ile Leu Glu Glu Glu Glu Asn Asp Glu Glu
 115 120 125

Ala Asp Lys Ser Asn Leu Lys Val Arg Ala Pro Ser Trp Ser Arg Glu
 130 135 140

Ser Lys Pro Lys Val
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<210> 48
<211> 45
<212> PRT
<213> Zea mays

<400> 48

Gly Gln Thr Arg Trp Glu Met Phe Asp Leu Leu Ser Ser Leu Pro Ser
1 5 10 15

Thr Ser Ser Ala Ser Ser Thr Thr Thr Val Ser Ser Thr Ala Ser Ser
 20 25 30

Gly Ala Pro Pro Pro Ser Arg Pro Asp Trp Met Leu Phe
 35 40 45

<210> 49
<211> 217
<212> PRT
<213> Zea mays

<400> 49

His Ala Ser Ala Ile Gly Arg Leu Ile Ser Pro Ser Ser Gly Cys Ser
1 5 10 15

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	

<400> 50

His Ser Ser Ala Leu Phe Phe Gln Tyr Asn Thr Ala Leu Gly Pro Pro

Leu Pro Asp Arg Ile Gln Ala Ile Pro Asp Gly Thr Pro Ala Ala Ser
115 120 125

Lys Gln Thr Gly Ser Trp Ala Ala Ser Ala Ser Arg Pro Gly Ile Lys
130 135 140

Phe Asp Thr Asp Gly Lys Phe Asp Asp Glu Tyr Phe Gln Gln Thr Glu
145 150 155 160

Glu Ser Ser Gly Phe Arg Lys Glu Tyr Glu Met Arg Lys Met Lys Gln
165 170 175

Asp Gln Gly Leu Asp Met Ile Ala Glu Gly Leu Asp Thr Leu Lys Asn
180 185 190

Met Ala His Asp Met Asn Glu Glu Leu Asp Arg Gln Val Pro Leu Met
195 200 205

Asp Glu Ile Asp Thr Lys Val Asp Arg Ala Ser Ser Asp Leu Lys Asn
210 215 220

Thr Asn Val Arg Leu Arg Asp Thr Val Asn Gln Leu Arg Ser Ser Arg
225 230 235 240

Asn Phe Cys Ile Asp Ile Val Leu Leu Ile Ile Ile Leu Gly Ile Ala
245 250 255

Ala Tyr Leu Tyr Asn Val Leu Lys Lys
260 265

<210> 52
<211> 107
<212> PRT
<213> Zea mays
<400> 52

His Ala Ser Gly Phe Leu Lys Cys Ala Ile Leu Thr Lys Pro Gln Ser
1 5 10 15

Tyr Gly Val Leu Leu Gln Leu Pro Ala Pro Gln Leu Glu Asn Ala Leu
20 25 30

Ser Lys Asn Pro Thr Leu Lys Thr Pro Leu Ala Glu His Ala Glu Gln
35 40 45

Pro Asn Ile Arg Ser Thr Leu Pro Arg Ser Thr Leu Val Val Leu Gly
50 55 60

Leu Ala Glu Asp Gln Pro Gln Gln Pro Ala Val Thr Gln Val Gln Ser
65 70 75 80

Ser Gln Asn Gln Ala Ala Glu Thr Ser Ser Ser Ala Ala Asp Thr Ala
85 90 95

Thr Glu Val Thr Gln Glu Ser Ser Gly Ala Ser
 100 105

<210> 53
 <211> 478
 <212> PRT
 <213> Glycine max

<400> 53

Ile Arg Leu Glu Phe Glu Ser Leu Glu Ile Glu Met Ala Asn Glu Asn
 1 5 10 15
 Glu Pro Ala Lys Leu Leu Leu Pro Tyr Leu Gln Arg Ala Asp Glu Leu
 20 25 30
 Gln Lys His Glu Pro Leu Val Ala Tyr Tyr Cys Arg Leu Tyr Ala Met
 35 40 45
 Glu Arg Gly Leu Lys Ile Pro Gln Ser Glu Arg Thr Lys Thr Thr Asn
 50 55 60
 Ala Leu Leu Val Ser Leu Met Lys Gln Leu Glu Lys Asp Lys Lys Ser
 65 70 75 80
 Ile Gln Leu Gly Pro Glu Asp Asn Leu Tyr Leu Glu Gly Phe Ala Leu
 85 90 95
 Asn Val Phe Gly Lys Ala Asp Lys Gln Asp Arg Ala Gly Arg Ala Asp
 100 105 110
 Leu Thr Thr Ala Lys Thr Phe Tyr Ala Ala Ser Ile Phe Phe Glu Ile
 115 120 125
 Leu Asn Gln Phe Gly Ala Val Gln Pro Asp Leu Glu Gln Lys Gln Lys
 130 135 140
 Tyr Ala Val Trp Lys Ala Ala Glu Ile Arg Lys Ala Leu Lys Glu Gly
 145 150 155 160
 Arg Lys Pro Thr Ala Gly Pro Pro Asp Gly Asp Glu Asp Leu Ser Val
 165 170 175
 Pro Leu Ser Ser Ser Ser Asp Arg Tyr Asp Leu Gly Thr Thr Glu Asn
 180 185 190
 Thr Val Ser Ser Pro Gly Pro Glu Ser Asp Ser Ser Arg Ser Tyr His
 195 200 205
 Asn Pro Ala Asn Tyr Gln Asn Leu Pro Ser Ile His Pro Ala Ala Pro
 210 215 220
 Lys Phe His Asp Thr Val Asn Asp Gln His Ser Ala Asn Ile Pro Ser
 225 230 235 240
 Ser Met Pro Phe His Asp Arg Val Asp Asn Asn Lys His Ser Ser Val

Cys Asp Lys Arg Cys Gln Ser Glu Arg Ile Leu Gly Asn Met Tyr Arg
 35 40 45
 Cys Lys Leu Thr Glu Thr Thr His Ile Cys Asp Lys Asn Cys Asn Gln
 50 55 60
 Arg Ile Leu Tyr Asp Asn His Asn Ser Leu Cys Arg Val Ser Gly Gln
 65 70 75 80
 Leu Phe Pro Leu Ser Pro Leu Glu Gln Gln Ala Val Arg Gly Ile Arg
 85 90 95
 Arg Lys His Glu Val Asp Ser Ser Glu Gly Cys Cys Phe Lys Arg Arg
 100 105 110
 Arg Gly Ala Gln Leu His Pro Ser Pro Phe Glu Arg Ser Tyr Ser Ala
 115 120 125
 Val Tyr Pro Ile Pro Ser Gln Val Gly Asp Gly Met Asp Met Ser
 130 135 140

<210> 55
 <211> 393
 <212> PRT
 <213> Zea mays

<400> 55

Met Lys Val Leu Val Leu Ala Val Leu Ala Leu Val Ala Ala Ala Ser
 1 5 10 15
 Ala Ala Gly Gln Gly Glu Glu Gly Gly Gly Pro Pro Leu Pro Phe Ala
 20 25 30
 Leu Gly Ala Ala Pro Ala Gly Cys Asp Val Ala Gln Gly Glu Trp Val
 35 40 45
 Arg Asp Asp Asp Ala Arg Pro Trp Tyr Gln Glu Trp Glu Cys Pro Tyr
 50 55 60
 Ile Gln Pro Gln Leu Thr Cys Gln Ala His Gly Arg Pro Asp Lys Ala
 65 70 75 80
 Tyr Gln Ser Trp Arg Trp Gln Pro Arg Gly Cys Ser Leu Pro Ser Phe
 85 90 95
 Asn Ala Thr Leu Met Leu Glu Met Leu Arg Gly Lys Arg Met Leu Phe
 100 105 110
 Val Gly Asp Ser Leu Asn Arg Gly Gln Tyr Val Ser Leu Leu Cys Leu
 115 120 125
 Leu His Arg Ala Ile Pro Asp Gly Ala Lys Ser Phe Glu Thr Val Asp
 130 135 140


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1             5             10             15
Asp Cys Lys Arg Leu Thr Tyr Asp Ala Leu Glu Gly Ala Asn Val Thr
      20             25             30
Pro Thr Ser Phe Tyr Asn Ile Gly Asp Leu Glu Ile Gln Asp Asn Leu
      35             40             45
Ala Arg Val Trp Val Asp Ile Gly Ile His Glu Pro Leu Leu Leu Asp
      50             55             60
Ile Leu Leu Asn Ala Leu Thr Thr Ile Ser Ser Asp His Val Gly Ile
      65             70             75             80
Lys Gln Val Gln Phe Gly Gly Ser Glu Phe Leu Asn Trp Ser Glu Asp
      85             90             95
Leu Lys Thr Glu Glu Val Gly Tyr Ser Val Cys Lys Ile
      100             105

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<210>      57
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<212>      PRT
<213>      Glycine max

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<400>      57

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Phe Gly Ser Ser Met Ala Ser Ala Thr Arg Leu Val His Cys Glu Leu
1             5             10             15
Arg Ser Ala Arg Pro Ala Val Arg Ala Arg Glu Pro Ala Gly Pro Val
      20             25             30
Gln Val Thr Ile Pro Lys Pro Lys Ala Ala Glu Ala Glu Gly Ala Asn
      35             40             45
Ile Val Leu Gln Pro Arg Leu Cys Thr Leu Arg Ser Tyr Gly Ser Asp
      50             55             60
Arg Ala Gly Val Leu Ile Lys Ala Arg Lys Glu Gly Asp Asp Asp Asp
      65             70             75             80
Val Ser Pro Phe Phe Ala Ala Leu Ser Asp Tyr Ile Glu Ser Ser Lys
      85             90             95
Lys Ser His Asp Phe Glu Ile Ile Ser Gly Arg Leu Ala Met Met Val
      100             105             110
Phe Ala Ala Thr Val Thr Met Glu Met Val Thr Gly Asn Ser Met Phe
      115             120             125
Arg Lys Met Asp Ile Glu Gly Ile Thr Glu Ala Gly Gly Val Cys Leu
      130             135             140
Gly Ala Val Thr Cys Ala Ala Leu Phe Ala Trp Phe Ser Ser Ala Arg
      145             150             155             160

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Asn Arg Val Gly Arg Ile Phe Thr Val Ser Cys Asn Ala Phe Ile Asp
165 170 175
Ser Val Ile Asp Gln Ile Val Asp Gly Leu Phe Tyr Glu Gly Asp Asp
180 185 190
Pro Thr Asp Trp Pro Asp Glu Pro
195 200

<210> 58
<211> 285
<212> PRT
<213> Zea mays

<400> 58

Pro Arg Val Arg Cys Pro Thr Thr Leu Lys Arg Ile Cys Arg Gln His
1 5 10 15
Gly Ile Asn Arg Trp Pro Ser Arg Lys Ile Lys Lys Val Gly His Ser
20 25 30
Leu Lys Lys Leu Gln Met Val Ile Asp Ser Val His Gly Ser Glu Gly
35 40 45
Thr Val Gln Leu Ser Ser Leu Tyr Glu Asn Phe Thr Lys Thr Thr Trp
50 55 60
Ser Glu Arg Glu Leu Gln Gly Asp Ala Thr Tyr Pro Leu Ser Glu Glu
65 70 75 80
Lys Gly Pro Leu Glu Pro Ser Val Pro Asp Arg Tyr Cys Glu Gly Arg
85 90 95
Phe Thr Ser His Thr Ser Gly Ser Asn Ser Leu Ser Pro Ser Cys Ser
100 105 110
Gln Ser Ser Asn Ser Ser His Gly Cys Ser Ser Gly Ser Lys Ser Gln
115 120 125
Gln His Val Ser Ala Pro Gln Leu Ala Val Lys Lys Glu Val Phe Met
130 135 140
Glu Glu Asn Gln Ser Ser Thr Leu Leu Lys Ala Ala Ser His Ala Glu
145 150 155 160
Leu Gln Met Leu Pro Glu Glu Arg Leu Val Thr Leu Pro Arg Ser His
165 170 175
Ser Gln Val Leu Leu Ser Glu Gln Lys Pro Val Glu Asn Ile Thr Gly
180 185 190
Met Gln Met Ser Lys Pro Asp Ser Leu Lys Ile Lys Ala Met Tyr Gly
195 200 205

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Glu Glu Arg Cys Ile Phe Arg Leu Gln Pro Ser Trp Gly Phe Glu Lys
 210 215 220
 Leu Lys Glu Glu Ile Leu Lys Arg Phe Gly Ile Ala Arg Glu Val Tyr
 225 230 235 240
 Val Asp Leu Lys Tyr Leu Asp Asp Glu Ser Glu Trp Val Leu Leu Thr
 245 250 255
 Cys Asn Ala Asp Leu Leu Glu Cys Ile Asp Val Tyr Lys Ser Ser Ser
 260 265 270
 Thr Gln Thr Val Arg Ile Leu Val His Ser Ser Asp Gln
 275 280 285

<210> 59
 <211> 115
 <212> PRT
 <213> Zea mays

<400> 59
 Met Arg Ala Met Ser Ser Ala Val Asn Gly Met Leu Arg Ala Arg Leu
 1 5 10 15
 Arg Gly Ala Ala Arg Val Arg Gly Gly Gly Gly Glu Gly Ala Gly Arg
 20 25 30
 Trp Thr Thr Pro Gly His Glu Glu Arg Pro Lys Gly Tyr Leu Phe Asn
 35 40 45
 Arg Pro Pro Pro Pro Pro Gly Glu Ser Arg Lys Trp Glu Asp Trp Glu
 50 55 60
 Leu Pro Cys Tyr Val Thr Ser Phe Leu Thr Val Val Ile Leu Gly Val
 65 70 75 80
 Gly Leu Asn Ala Lys Pro Asp Leu Thr Ile Glu Thr Trp Ala His Gln
 85 90 95
 Lys Ala Leu Glu Arg Leu Gln Gln Gln Glu Leu Ala Ala Ala Asp Thr
 100 105 110
 Gln Ala Glu
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<210> 60
 <211> 168
 <212> PRT
 <213> Glycine max

<400> 60
 Ile Arg Leu Glu Gln Arg Pro Val Glu Gly Asn Ala Thr Met Lys Gln
 1 5 10 15

Asp Leu Arg Ser Phe Lys Leu Ile Leu Glu Tyr Ile Lys Ala Leu Pro
 20 25 30
 Thr Gly Gln Glu Thr Asp Phe Val Leu Val Ser Cys Ser Gly Leu Gly
 35 40 45
 Ile Glu Pro Ser Arg Arg Glu Gln Val Leu Lys Ala Lys Arg Ala Gly
 50 55 60
 Glu Asp Ser Leu Arg Arg Ser Gly Leu Gly Tyr Thr Ile Val Arg Pro
 65 70 75 80
 Gly Pro Leu Gln Glu Glu Pro Gly Gly Gln Arg Ala Leu Ile Phe Asp
 85 90 95
 Gln Gly Asn Arg Ile Ser Gln Gly Ile Ser Cys Ala Asp Val Ala Asp
 100 105 110
 Ile Cys Val Lys Ala Leu His Asp Thr Thr Ala Arg Asn Lys Ser Phe
 115 120 125
 Asp Val Cys Tyr Glu Tyr Ile Ala Glu Asp Gly Arg Glu Leu Tyr Glu
 130 135 140
 Leu Val Ala His Leu Pro Asp Lys Ala Asn Asn Tyr Leu Thr Pro Ala
 145 150 155 160
 Leu Ser Val Leu Glu Lys Asn Thr
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<210> 61
 <211> 723
 <212> PRT
 <213> Zea mays
 <400> 61

Met Ala Gly Lys Glu Asp Glu Asn Glu Lys Pro Ser Leu Val Ala Ala
 1 5 10 15
 Gly Gly Lys Gln Asp Arg Thr Ala Ala Thr Thr Glu Ser Leu Pro Gln
 20 25 30
 Arg Thr Asn Leu Glu Trp Gly Lys Ala Ala Cys Ser Glu Asp Asp Ile
 35 40 45
 Gln Lys Cys Val Ala Ala Gly Ala Phe His Pro Gly Glu Leu Val Glu
 50 55 60
 Trp Arg Ala Pro Val Lys Asp Glu Thr Pro Thr Leu Ser Thr Met Glu
 65 70 75 80
 Asp Gln Phe Val Ile Leu Ser Leu Thr His Ile Ile Cys Gly Leu Arg
 85 90 95

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Gln	Lys	Ser	Ile	Glu	His	Pro	Thr	Val	Ala	Glu	Glu	Arg	Lys	Ile	Ala	405	410	415
Glu	Leu	Val	Lys	Pro	Thr	Phe	Ser	Val	Ile	Gly	Ala	Lys	Arg	Lys	Ala	420	425	430
Ser	Ala	Pro	Arg	Ser	Arg	Ser	Lys	Arg	Arg	Ala	Lys	Tyr	Ser	Leu	Leu	435	440	445
Ser	Val	Val	Thr	Lys	Thr	Arg	Met	Ser	Ser	Leu	Asp	Thr	Gly	Ser	Ile	450	455	460
Lys	Gly	Thr	Ser	Arg	Thr	Lys	Glu	Ala	Val	Leu	Ala	Leu	Asn	Ser	Arg	465	470	475
Ser	Ile	Gly	Leu	Ala	Arg	Cys	Pro	Pro	Ala	Ser	Leu	Ala	Glu	Gly	Thr	485	490	495
Gly	Asn	Gly	Gly	Leu	Phe	Met	Leu	Ala	Lys	Val	Val	Asp	His	Thr	Lys	500	505	510
Val	Val	Glu	Asp	Ser	Met	Ser	Asn	Ile	Leu	Leu	Asn	Gln	Gln	Val	Gly	515	520	525
Asp	Ser	Ser	Arg	Lys	Glu	Val	Asp	Pro	Ala	Gln	Ser	Ile	Thr	Glu	Ile	530	535	540
Val	Gln	Asp	Gln	Glu	Ala	Ile	Glu	Val	Ser	Ala	Ala	Ile	Pro	Val	Pro	545	550	555
Asn	Lys	Glu	Glu	Ile	Asn	Ser	Gly	Val	Ile	Trp	Glu	Arg	Met	Gln	Lys	565	570	575
Val	Gln	Ser	Glu	Tyr	Val	Ser	Leu	Ser	Met	Thr	Ala	Ser	Ser	Glu	Leu	580	585	590
Leu	Glu	Gln	Ala	Lys	Lys	Leu	Val	Met	Glu	Asn	Lys	Arg	Leu	Lys	Asp	595	600	605
Val	Gln	Ile	Met	Leu	Ser	Gln	Gln	Val	Lys	Asp	Leu	Glu	Asp	Gly	Arg	610	615	620
Arg	Leu	Leu	Thr	Glu	Arg	Met	Lys	Lys	Ala	Glu	Gln	Glu	Thr	Phe	Lys	625	630	635
Ile	Ile	Glu	Glu	Asn	Met	Lys	Leu	Lys	Asp	Glu	Asn	Lys	Gly	Gln	Lys	645	650	655
Gln	Met	Ile	Glu	Glu	Leu	Ser	Lys	Gln	Asn	Glu	Ser	Thr	Leu	Gly	Ala	660	665	670
Leu	Val	His	Lys	Cys	Thr	Leu	Leu	Asp	Arg	Tyr	Lys	Glu	Glu	Ser	Ala	675	680	685
Gln	Leu	Ile	Arg	Glu	Lys	Glu	Glu	Leu	Gln	Ser	Arg	Val	Ser	Arg	Val	690	695	700

Asn Asp Leu Val Lys Leu Val Ser Ser Thr Leu Cys Gln Glu Lys Asp
 705 710 715 720

Ser Ala Ser

<210> 62
 <211> 342
 <212> PRT
 <213> Glycine max

<400> 62

Met Ser Glu Lys Ala Leu Arg Asp Leu Asn Thr Ile Leu Gly Thr Glu
 1 5 10 15

Arg Lys Asn Glu Asp Ser Ser Lys Ala Cys Leu Ser Lys Pro Ser Val
 20 25 30

Asp Asn Ala Val Glu Asn Ile Glu Glu Trp Gln Lys Lys Asn Asn Ser
 35 40 45

Pro Ser Leu Val Ser Pro Ala Val Asn Gly Asn Leu Ala Val Thr Ala
 50 55 60

Asn Ser Gly Ala Glu Val Val Asn Pro Glu Val Glu Tyr Ile Glu Ser
 65 70 75 80

Glu Asn Leu Asn Asp Val Asp Asp Ile Asp Thr Cys Leu Lys Thr Leu
 85 90 95

Leu Ala Gly Leu Asp Ser Lys Asp Trp Val Leu Val Cys Asp Thr Leu
 100 105 110

Asn Asn Val Arg Arg Leu Ser Ile Phe His Lys Glu Ala Met Leu Asp
 115 120 125

Met Leu Gly Asp Val Ile Thr Ser Ile Ala Lys Ser Leu Lys Ser Pro
 130 135 140

Arg Ser Ala Val Cys Lys Thr Ala Ile Met Thr Ser Ala Asp Ile Phe
 145 150 155 160

Ser Ala Tyr Asn Asp Leu Ile Ile Asp Ser Leu Asp Pro Leu Leu Val
 165 170 175

Gln Leu Leu Leu Lys Ser Ser Gln Asp Lys Arg Phe Val Cys Glu Ala
 180 185 190

Ala Glu Lys Ala Leu Ile Ser Met Thr Ile Trp Ile Ser Pro Ile Ser
 195 200 205

Leu Leu Pro Lys Leu Gln Pro Tyr Leu Lys Asn Lys Asn Pro Arg Ile
 210 215 220

Arg Ala Lys Ala Ser Met Cys Phe Ser Arg Ser Val Pro Gln Leu Gly
 225 230 235 240

Ala Glu Gly Ile Lys Thr Tyr Gly Ile Asp Lys Leu Ile Gln Val Ala
245 250 255

Ala Ser Gln Leu Ser Asp Gln Leu Pro Glu Ser Arg Glu Ala Ala Arg
260 265 270

Thr Leu Leu Leu Glu Leu Gln Asn Val Tyr Glu Lys Ser His Asp Leu
275 280 285

Ile Lys Pro Ala Thr Pro Thr Val Asn Asn Glu His Thr Val Asn Glu
290 295 300

Glu Asn Pro Glu Val Ser Ser Trp Glu Ser Phe Cys Gln Ser Lys Leu
305 310 315 320

Ser Pro Leu Ser Ala Gln Ala Val Leu Arg Val Thr Thr Ser Ile Ala
325 330 335

Arg Glu Gly Leu Val Ser
340

<210> 63
<211> 509
<212> PRT
<213> Zea mays
<400> 63

Pro Arg Val Arg Ala Leu Leu Ala Ser Thr Ile Val Pro His Pro Asn
1 5 10 15

Gln Gly Asn Met His Glu Pro Ala Ile Asp Met Pro Phe Gly Ser Val
20 25 30

Leu Leu Gln Ala Leu Val Ser Ser Asp Val Asn Gly Asp Met Glu Ala
35 40 45

Cys Cys Arg Ala Ser Ser Val Leu Ser His Ile Val Lys Asp Asn Met
50 55 60

Gln Ser Lys Asp Arg Val Leu Gln Ile Gln Leu Glu Thr Leu Thr Pro
65 70 75 80

Ser Leu Gly Arg Thr Glu Pro Val Leu His Arg Ile Val Thr Cys Leu
85 90 95

Ser Ile Ala Ala Ser Thr Glu Gly Glu Asn Asn Gln Asn Asn Gln Pro
100 105 110

Glu Glu Pro Tyr Ile Gln Pro Val Ile Leu Arg Leu Leu Ile Ile Trp
115 120 125

Leu Val Asp Cys Ser Asn Ala Val Asn Cys Leu Leu Glu Ser Ala Val
130 135 140

Lys Asp Ser Glu Ala Glu Leu Asn Gly Leu Leu Val Cys Leu Gly Gln
 450 455 460

Glu Gln Thr Lys Val Glu Lys Leu Ser Thr Arg Leu Ala Glu Leu Gly
 465 470 475 480

Glu Asp Val Asp Ala Leu Leu Gln Gly Ile Gly Asp Asp Thr Ala Ile
 485 490 495

Pro Asp Asp Asp Asp Asp Asp Asp Glu Asp Ser Glu Glu
 500 505

<210> 64
 <211> 102
 <212> PRT
 <213> Zea mays

<400> 64

Gln Phe Lys Ile Asp Pro Gln Asp Phe Gln Asp Ser Glu Pro Asp Ile
 1 5 10 15

Leu Ala Asn Ser Ala Ser Ser Ile Ile Glu Arg Ile Lys Glu Asn Ser
 20 25 30

Asp Gln Cys Ala Ala Ala Leu Arg Ser Leu Cys Arg Arg Lys Lys Gly
 35 40 45

Leu Thr Val Glu Glu Ala Ser Leu Ile Gly Val Asp Ser Leu Gly Ile
 50 55 60

Asp Val Arg Ala Phe Ser Gly Leu Glu Val Lys Thr Val Arg Phe Ser
 65 70 75 80

Phe Asn Ala Gln Ala Leu Ser Glu Arg Ser Ala Glu Lys Lys Ile Arg
 85 90 95

Arg Met Leu Phe Pro Arg
 100

<210> 65
 <211> 587
 <212> PRT
 <213> Zea mays

<400> 65

Pro Arg Val Arg Ser Val Leu Lys Thr Lys Pro Ser Pro Arg Ile Leu
 1 5 10 15

Thr Glu Ala Ala Pro Trp Arg Gln Gln Glu Arg Ser Ala Thr Asn Ile
 20 25 30

Cys Arg Glu Ala Glu Gly Arg Pro Arg Ile Ala Ser Val Tyr Ala Asp
 35 40 45

Lys Pro Glu Asn Leu Glu Val Leu Ile Gln Lys Leu Glu Gln Leu Gln
355 360 365

Ser Met Asn Glu Glu Asp Ala Ser Ile Lys Glu Val Met Ala Ser Val
370 375 380

Thr Ala Asn Lys Asp His Gln Tyr Ile Tyr Glu Ile Leu Leu Ala Ser
385 390 395 400

Gly Leu Leu His Lys Glu His Ser Ile Thr Ala Leu Pro Ala Gln Leu
405 410 415

Gln Pro Ser Asn Tyr Pro Ile Asn Pro Glu Leu Phe Leu Ile Leu Glu
420 425 430

Gln Thr Lys Pro Asp Leu Val Phe Ala Phe Gln Thr Val Ser Gly Thr
435 440 445

Lys Lys Ser Cys Lys Pro Tyr Thr Gly Lys Leu His Arg Arg Leu Val
450 455 460

Phe Asp Leu Val Asn Glu Thr Ile Ala Gln Lys Met Ile Ile Cys Arg
465 470 475 480

Ser Gly Ser Gln Pro Val Lys Phe Leu Gln Ser Arg Lys Leu Ser Gly
485 490 495

Trp Gln Leu Phe Lys Asp Leu Cys Thr Glu Val Asp Arg Gln Ile Lys
500 505 510

Cys Thr Gly Glu Glu Glu Asn Gly Asn Met Ile Leu Asp Glu Asp Thr
515 520 525

Val Asn Gly Thr Lys Asp Trp Met Ser Phe Asp Thr Met Leu His Gly
530 535 540

Met Val Trp Glu Ile Glu Arg Ser Ile Phe Lys Gly Leu Ile Asp Glu
545 550 555 560

Val Ile Gly Gly Glu Thr Ile Glu Lys Met Gln Phe Gly Gln Arg Lys
565 570 575

Leu Gln Arg Gln Leu Ser Phe Ser Ser Ile Asn
580 585

<210> 66
<211> 243
<212> PRT
<213> Zea mays

<400> 66

Pro Arg Val Arg Ile Phe Leu Ala Trp Trp Leu Thr Arg Lys Ala Gln
1 5 10 15

Val Ala Ala Glu Gln Leu Lys Ile Ser Met Glu Arg Ile Ala Leu Leu
340 345 350

Lys Ala Ala Arg Pro Lys Val Pro Pro Ala Lys Thr Asp Gln Glu Glu
355 360 365

Glu Glu Glu Arg Lys Gln Ser Glu Glu Leu Asp Gly Phe Gly Asn Pro
370 375 380

Lys Gly Pro Ser Thr Leu Ser Lys Leu Thr Ala Glu Glu Ala Glu His
385 390 395 400

Arg Ala Leu Gln Ala Ala Val Leu Gln Glu Trp His Gln Leu Cys Lys
405 410 415

Glu Arg Ala Met Lys Ala Gln
420

<210> 68
<211> 371
<212> PRT
<213> Zea mays

<400> 68

Pro Arg Val Arg Ala Ser Gly Ile Ser Gly Thr Ser Val Arg Leu Thr
1 5 10 15

Ala Gly Ala Gly Leu Pro Val His Met Lys Gly Glu Leu Asn Thr Ala
20 25 30

Phe Ile Gly Leu Gly Asp Asp Gly Gly Tyr Gly Gly Trp Val Pro
35 40 45

Leu Ala Ala Leu Lys Lys Val Leu Arg Gly Ile Leu Lys Tyr Leu Gly
50 55 60

Val Leu Trp Leu Phe Ala Gln Leu Pro Glu Leu Leu Lys Glu Ile Leu
65 70 75 80

Gly Ser Ile Leu Lys Asp Asn Glu Gly Ala Leu Leu Asn Leu Asp Gln
85 90 95

Glu Gln Pro Ala Leu Arg Phe Tyr Val Gly Gly Tyr Val Phe Ala Val
100 105 110

Ser Val His Arg Val Gln Leu Leu Leu Gln Val Leu Ser Val Lys Arg
115 120 125

Phe His His Gln Gln Gln Gln Gln Gln Ala Gln Ser Asn Ala Gln Glu
130 135 140

Glu Leu Ala Ala Val Glu Ile Asn Glu Ile Cys Asp Tyr Phe Ser Arg
145 150 155 160

Arg Val Ala Ser Glu Pro Tyr Asp Ala Ser Arg Val Ala Ser Phe Ile
165 170 175

Thr Leu Leu Thr Leu Pro Ile Leu Val Leu Arg Glu Phe Leu Lys Leu
180 185 190

Ile Thr Trp Lys Lys Gly Leu Ser Pro Val His Gly Asp Ile Ala Thr
195 200 205

Ala Gln Arg Ala Arg Ile Glu Leu Cys Leu Glu Asn His Ser Gly Ser
210 215 220

Ala Ser Ser Asp Asn Thr Glu Asn Ser Ser Leu Ala Lys Ser Asn Ile
225 230 235 240

His His Asp Arg Ala His Ser Ser Val Glu Phe Ala Leu Thr Phe Val
245 250 255

Leu Asp His Ala Leu Ile Pro His Met Asn Val Ala Gly Gly Ala Ala
260 265 270

Trp Leu Pro Tyr Cys Val Ser Val Lys Leu Arg Tyr Ser Phe Gly Asp
275 280 285

Asn Asn His Ile Ala Phe Leu Ala Met Asn Gly Ser His Gly Gly Arg
290 295 300

Ala Cys Trp Leu Gln Phe Glu Glu Trp Glu Arg Cys Lys Gln Lys Val
305 310 315 320

Ser Arg Ala Val Glu Thr Val Asn Gly Ser Gly Val Ala Gly Glu Val
325 330 335

Gly Gln Gly Arg Leu Arg Met Val Ala Glu Met Ile Gln Lys Gln Leu
340 345 350

Gln Leu Cys Leu Gln Gln Leu Arg Asp Asp Pro Leu Ser Ala Gly Ser
355 360 365

Thr Ala Ser
370

<210> 69
<211> 178
<212> PRT
<213> Zea mays

<400> 69

Thr Arg Pro Asp Asp Pro Cys Pro Tyr Leu Leu Ser Ile Trp Thr Pro
1 5 10 15

Gly Glu Thr Ala Gln Ser Ile Asp Ala Pro Lys Thr Phe Cys Asp Ser
20 25 30

Gly Glu Thr Gly Arg Leu Cys Gly Ser Ser Thr Cys Phe Ser Cys Asn

Val Arg Pro Gln Val Gln Ser Val Asn Leu Asp Leu Asn Ile Ser Thr
115 120 125

Ala Ala Ala Ile Asp Asn Cys Ala Ala Asn Gly Ala Ala Ala Ala Ala
130 135 140

Ser Asp Asp Glu Asp Glu Pro Arg Lys Pro Ala Gly Thr Leu Phe Ser
145 150 155 160

Gly Gly Ser Met Val Ala Val Pro Cys Ala Asn Cys His Leu Leu Val
165 170 175

Met Leu Cys Lys Ser Ser Pro Ser Cys Pro Asn Cys Lys Phe Val Gln
180 185 190

Pro Leu Ala Pro Ala Val Pro Pro Ala Ala Val Ala His Trp Arg Ile
195 200 205

Asp Ala Ala Val Lys Pro Leu Glu Thr Leu Ser Leu Leu His
210 215 220

<210> 71
<211> 303
<212> PRT
<213> Zea mays

<400> 71

Met Lys Leu Lys Asn Ser Ala Val Glu Thr Phe Lys Glu Asn Asn Met
1 5 10 15

Ile Phe Thr Ser Glu Gly Asn Leu His Ser Lys Lys Met Arg Glu Asp
20 25 30

Tyr Val Ala Ser Pro Asn Gln Pro Gly Ala Val Gln Thr Arg Cys Lys
35 40 45

Trp Ile Ile Gly Asp Val Thr Glu Val Phe Asp Arg Ser Thr Trp Lys
50 55 60

Leu Gly Lys Ile Leu Lys Met Leu Lys Asn Asn Tyr Phe Val Ile Arg
65 70 75 80

Leu Ala Asp Cys Ile Gln Leu Lys Glu Phe His Ile Ser Ser Leu Arg
85 90 95

Ile Pro Arg Gly Leu Glu Ala Pro Gln Ser Lys Pro Phe His Ala Ala
100 105 110

Asp Lys Ala Thr Gly Arg Gly Asn Arg Arg Pro Ala Asp Gly Ala Leu
115 120 125

Pro Gly Ala Arg Ala Ala Asp Gln Met Gly His Arg Ala Tyr Glu Leu
130 135 140

Gly Ser Ser Gly Lys Lys Arg Lys Ala Thr Ala Asp Ala Ser His His

[illegible]

<400> 73

Ala Leu Gly Arg Lys Phe Thr Arg Phe Gly His Gln Ala Lys Glu Asp
20 25 30

Arg Gln Ala Ala Ile Phe Arg Ser Glu Asn Gly Asn Val Trp Gln Val
35 40 45

Lys Ile Phe Gly Glu Asp Lys Thr Gly Lys Arg Ser Gly Gln Tyr Leu
50 55 60

Ala Pro Thr Gly Ile Gly Asp Val Pro Tyr Leu Pro Thr Ile Pro Arg
65 70 75 80

Arg Ile Ile Leu Ala Ile Ala Glu Lys His Gly Val Lys Pro Pro Glu
85 90 95

Asp Gly Gln Asp Phe Trp Pro Trp Phe Val Asp His Pro Glu Ile Pro
100 105 110

Leu Ile Val Thr Glu Gly Gly Lys Lys Ala Leu Ala Ala Ile Ser Gln
115 120 125

Gly Tyr Val Ala Leu Ser Leu Tyr Gly Cys Leu Cys Gly Asn Asp Gly
130 135 140

Leu Thr Ile Lys Pro Ser Leu Leu Pro Tyr Val Gln Gly Arg Glu Val
145 150 155 160

Ala Ile Ala Tyr Asp Gln Asp Ala Lys Gly Ser Lys Gly Arg Lys Ala
165 170 175

Val Phe Lys Gly Thr Lys Arg Leu Ala Arg Asn Leu Thr Tyr His Ala
180 185 190

Lys Ala Thr Val
195

<210> 74
<211> 151
<212> PRT
<213> Zea mays

<400> 74

Pro Arg Val Arg Met Asn Leu Arg Arg Gln Thr Pro Leu Ala Ala Ile
1 5 10 15

His Ala Ala Leu Ala Ser Ala Asp Ala Met Val Ala Val His Gly Ala
20 25 30

Ala Val Thr His Phe Leu Phe Met Arg Pro Gly Ser Val Leu Leu Gln
35 40 45

Val Val Pro Val Gly Leu Asp Trp Ala Ala Asp Ala Phe Tyr Gly Lys
50 55 60

Pro Ala Gln Gln Leu Gly Leu Glu Tyr Leu Glu Tyr Lys Val Ala Pro
65 70 75 80

Glu Glu Ser Ser Leu Ala Ala Glu Tyr Gly Leu Asp Ser Thr Val Leu
85 90 95
Arg Asn Pro Trp Val Ile Ser Ser Arg Gly Trp Trp Glu Met Lys Lys
100 105 110
Val Tyr Met Asp Arg Gln Asn Val Thr Val Asn Ile Lys Arg Phe Gly
115 120 125
Glu Leu Leu Arg Thr Ala Arg Thr His Leu Lys Asn Thr Thr Ala Cys
130 135 140
Ala Ala Ala Ala Ala Leu Arg
145 150

<210> 75
<211> 356
<212> PRT
<213> Zea mays

<400> 75

Thr Arg Pro Ile Glu Pro Gly Ser Arg Pro Glu Thr Ser Asp Tyr Pro
1 5 10 15
Gln Ser Ser Glu Arg Pro Leu Thr Ala Thr Ser Ser Phe Ser Ser Ala
20 25 30
Ser Pro Phe Ser Glu Ser Ser Gln Leu Ala Ser Ser Ser Lys Gln Pro
35 40 45
Ala Pro Tyr Leu Pro Arg Asn His Met Gly Arg Arg Ser Phe Met Ser
50 55 60
Lys Pro Val Tyr Pro Leu Val Phe Arg Asn Pro Val Ser Glu Ser Glu
65 70 75 80
Ala Cys Arg Met Leu Glu Val Gly Asn Ala Gly Arg Ala Thr Pro Ser
85 90 95
Asp Asp Ser Gln Ala Ser Pro Leu Trp Arg Arg Ser Leu Ala Ser Pro
100 105 110
Asp Leu Lys Phe His Asn Ala Pro Asn Glu Leu Gly Lys Met Glu Thr
115 120 125
Ser Pro Glu Pro Asn Thr Ser Ser Arg Arg Glu Gly Phe Arg Trp Ser
130 135 140
Asn Ala Ser Ser Tyr Asp Phe Gly Tyr Asp Gly Asp Ala Ile Asp Ile
145 150 155 160
Ser Asp His Ile Ser Ile Glu Ser Gln Arg Ser Pro Thr Ser Ser Ala
165 170 175
Arg Phe Leu Lys Cys Gly Leu Cys Glu Arg Phe Leu His Gln Lys Ser

Thr Val Ala Leu Arg Lys Phe Lys Trp Lys Asp Cys His Ser Pro Pro
 690 695 700
 Asp Thr Lys Ile Ala Phe Ile Val Asp Gln Glu Val Phe Arg Arg Asn
 705 710 715 720
 Ile Ile Phe Val Val Gly Arg Asn Gly Arg Leu Tyr Gln Tyr Asn Arg
 725 730 735
 Ile Thr Glu Leu Trp His Arg His Tyr Gln Ser Pro His Leu Phe Leu
 740 745 750
 Ser Cys Ser Pro Gly Thr Ala Met Arg Pro Ser Pro Leu Ser Leu Ala
 755 760 765
 Gly Ser Leu Phe Met Val Ser Glu His Gly Gly Leu Val Glu Tyr His
 770 775 780
 Phe Ser Pro Gln Asp Gly Trp Glu Trp Val Glu His Gly Thr Pro His
 785 790 795 800
 Arg Gly Val Thr Leu Val Gly Ala Pro Gly Pro Cys Phe Asp Gly Ser
 805 810 815
 Gln Leu Phe Val Val Gly Ser Asp Gly His Val Tyr Arg Arg His Met
 820 825 830
 Glu Gly Arg Thr Trp Arg Trp Thr Ser His Gly His Pro Pro Ser Glu
 835 840 845
 Pro Ala Ala Val Asp Glu Gln Ser Cys Ala Thr Pro Asp Thr Gly Ala
 850 855 860
 Gly Ala His Tyr Ala Asp Gly Phe Arg Gly Ser Cys Asp Gly Lys Val
 865 870 875 880
 Ala Ala Val Arg Pro Val Pro Phe Ser Glu Asp Ala Val Val Phe Glu
 885 890 895
 Leu Arg Asp Gly Arg Leu Ala Glu Leu Arg Arg Pro Pro Ser Ala Asp
 900 905 910
 Gly Cys Gly Gly Trp Glu Trp Ala Arg Ile Ile Gly Thr Pro Ala Ser
 915 920 925
 Ala Cys Met Thr Ser Tyr Trp Thr Ala Val Ala Thr
 930 935 940

<210> 77
 <211> 556
 <212> PRT
 <213> Zea mays
 <400> 77

His	Ala	Ser	Gly	Thr	Met	Glu	Ile	Gly	Leu	Arg	Gly	Pro	Thr	Asn	Leu	1	5	10	15
Phe	Gly	His	Pro	Thr	Asp	Lys	Gln	Met	Ile	Glu	Leu	Asp	Gln	Ala	Leu	20	25	30	
Ser	Gln	Trp	Asn	Thr	Asp	Phe	Asp	Lys	Val	Pro	Val	Thr	Lys	Ile	Ala	35	40	45	
Phe	Gly	His	Phe	Pro	Leu	Ser	Phe	Ser	Ala	Leu	Thr	Glu	Ser	Gly	Lys	50	55	60	
Ser	Ile	Lys	Asp	Val	Phe	Leu	Lys	Gln	Ser	Leu	Ala	Ala	Tyr	Leu	Cys	65	70	75	80
Gly	His	Leu	His	Thr	Arg	Phe	Gly	Lys	Asn	Leu	Lys	Arg	Tyr	Tyr	His	85	90	95	
Arg	Ala	Val	Gln	Glu	Ser	Ser	Leu	Ser	Glu	His	Tyr	Tyr	Gln	His	Asn	100	105	110	
Met	His	Gln	Gly	Asp	Ala	Phe	Gln	Gly	Asn	Lys	Glu	Asn	Cys	Ser	Glu	115	120	125	
Glu	Ala	Ser	His	Ile	Glu	Glu	Phe	Trp	Glu	Trp	Glu	Met	Gly	Asp	Trp	130	135	140	
Arg	Lys	Ser	Arg	Ser	Met	Arg	Ile	Leu	Ala	Ile	Asp	Asp	Gly	Tyr	Val	145	150	155	160
Ser	Tyr	Thr	Asp	Ile	Asp	Phe	Arg	Leu	Gly	Ser	Lys	Ser	Ile	Ile	Ile	165	170	175	
Leu	Pro	Thr	Phe	Pro	Leu	Asp	Ser	Arg	Phe	Met	Gln	Arg	Ala	Ser	Ala	180	185	190	
Phe	Arg	Asp	Phe	Lys	Cys	His	Val	Met	Gly	Ala	Ser	Ser	Phe	Asp	Thr	195	200	205	
Val	Arg	Ala	Leu	Val	Phe	Ser	Lys	His	Glu	Ile	Ile	Ser	Val	Ser	Val	210	215	220	
Lys	Ile	Tyr	Asp	Ser	Arg	Pro	Gly	Thr	Leu	Glu	Ile	Val	Phe	Asp	Ser	225	230	235	240
Glu	Met	Lys	Arg	Val	Asp	Ser	Asn	Glu	Thr	Arg	Gly	Asn	Met	Tyr	Leu	245	250	255	
Ile	Pro	Trp	Asn	Trp	Arg	Ala	Phe	Glu	Asp	Ser	Ser	Pro	Ser	Arg	Tyr	260	265	270	
Trp	Leu	Gln	Ile	Glu	Val	Met	Asp	Ile	Thr	Gly	Asp	Thr	Ser	Val	Ser	275	280	285	
Gln	Leu	Arg	Pro	Phe	Ser	Val	Asn	Gly	Leu	Pro	Ala	Arg	Val	Asn	Trp	290	295	300	

Thr Trp Lys Glu Phe Phe Val Ile Gly Ile Gln Trp Ala Ser Ile Tyr
 305 310 315 320
 His Pro Ala Leu Trp Cys Ala Phe Ser Leu Ile Phe Ser Leu Leu Leu
 325 330 335
 Val Pro Gln Val Leu Ala Val Val Phe Lys Asp Arg Phe Thr Tyr Lys
 340 345 350
 Ser Leu Cys Ala Tyr Gly Gly Gln Arg Thr Leu Leu Lys Ser Leu Val
 355 360 365
 Gly Gly Phe Ile Cys Cys Phe Val Glu Leu Ser Arg Leu Val Leu Val
 370 375 380
 Trp Leu Leu Leu Leu Leu Tyr Ala Ile Tyr Leu Val Phe Ile Pro Trp
 385 390 395 400
 Leu Phe Gly His Pro Ile Thr Glu Asp Gly Ser Leu Thr Tyr Met Thr
 405 410 415
 His Lys Gly Trp Ile Leu Lys Gly Pro Ser Ser Ser Asn Glu Val Val
 420 425 430
 His Ala Gly Ile Pro Asp Val Met Val Ile Val Leu Pro His Leu Cys
 435 440 445
 Phe Val Leu Val Pro Thr Ile Val Ile Leu Ala Ala Met Ala Ala Glu
 450 455 460
 Arg Thr Ala Tyr Arg Glu His Tyr Leu Ser Arg Ser Gly Lys Lys Lys
 465 470 475 480
 Asp Asp Tyr Arg Lys Ser Arg Thr Gln Ile Glu His Glu Asn Phe Trp
 485 490 495
 Asn Gly Arg Trp Ile Ser Lys Phe Leu Cys Leu Leu Cys Val Val Val
 500 505 510
 Leu Cys Lys His Trp Lys Leu Cys Arg Ala Leu Val Lys Ala Tyr Ala
 515 520 525
 Met Asn Pro Leu Leu His Ala Pro Val Leu Phe Phe Phe Val Pro Leu
 530 535 540
 Leu Met Val Phe Ala Ile Tyr Lys Thr Arg Ser Ile
 545 550 555

<210> 78
 <211> 167
 <212> PRT
 <213> Zea mays

<400> 78

Met Ala Gly Ala Glu Gly Glu Arg Trp Val Gly Leu Ala Thr Asp Phe

1	5	10	15
Ser Glu Gly	Ser Arg Ala Ala Leu Arg Trp Ala Ala Ala Asn Leu Leu		
	20	25	30
Arg Ala Gly	Asp His Leu Leu Leu Leu His Val Ile Lys Glu Pro Asp		
	35	40	45
Tyr Glu Gln	Ser Glu Ala Ile Leu Trp Glu Ser Thr Gly Ser Pro Leu		
	50	55	60
Ile Pro Leu	Ser Glu Phe Ser Asp Pro Ile Ile Ala Lys Lys Tyr Gly		
	65	70	80
Ala Lys Pro	Asp Ile Glu Thr Leu Asp Ile Leu Asn Thr Thr Ala Thr		
	85	90	95
Gln Lys Asp	Ile Val Val Val Val Lys Val Leu Trp Gly Asp Pro Arg		
	100	105	110
Glu Lys Leu	Cys Gln Val Ile His Asp Thr Pro Leu Ser Cys Leu Val		
	115	120	125
Ile Gly Ser	Arg Gly Leu Gly Lys Leu Lys Arg Val Leu Leu Gly Ser		
	130	135	140
Val Ser Asp	Tyr Val Val Asn Asn Ala Thr Cys Pro Val Thr Val Val		
	145	150	155
Lys Ser Thr	Ser Thr Glu Gly		
	165		

<210> 79
 <211> 81
 <212> PRT
 <213> Zea mays
 <400> 79

Gln Thr Arg	Ala Tyr Leu Ser Asn Val Cys Val Ala Lys Glu Leu Gln
1	5 10 15
Lys Lys Gly	Leu Gly Tyr Thr Leu Val Asp Lys Ser Lys Lys Leu Ala
	20 25 30
Leu Glu Trp	Gly Ile Thr Asp Leu Tyr Val His Val Ala Ile Asn Asn
	35 40 45
Val Ala Gly	Gln Lys Leu Tyr Lys Lys Cys Gly Phe Val Tyr Glu Gly
	50 55 60
Glu Glu Pro	Ala Trp Lys Gly Arg Phe Leu Gly Arg Pro Arg Arg Leu
	65 70 75 80
Leu	

[illegible]

Met Asn Gly Gly Leu Pro Gly Phe His Asn Ala Pro Ala Ser Lys Ala
1 5 10 15

His Ser Leu Asn Leu Gly Leu Ala Tyr Gln Ser Val Tyr Glu Lys Leu
35 40 45

Ser Val Trp Arg Leu Ile Thr Ser Phe Phe Ala Phe Ser Ser Thr Pro
50 55 60

Glu Leu Ile Phe Gly Ala Val Leu Leu Tyr Tyr Phe Arg Val Phe Glu
65 70 75 80

Arg Gln Ile Gly Ser Asn Lys Tyr Ala Val Phe Ile Ile Phe Ser Thr
85 90 95

Met Val Ser Val Leu Leu Gln Ile Leu Ala Leu Gly Tyr Met Lys Asp
100 105 110

Pro Ser Leu Asn Pro Leu Thr Ser Gly Pro Tyr Gly Leu Ile Phe Ala
115 120 125

Ser Tyr Val Pro Phe Phe Phe Asp Ile Pro Ile Ser Met Lys Phe Arg
130 135 140

Ile Phe Gly Leu Ser Phe Ser Asp Lys Ser Phe Val Tyr Leu Ala Gly
145 150 155 160

Leu Gln Leu Leu Phe Ser Ser Gly Arg Arg Ser Ile Val Pro Gly Leu
165 170 175

Ser Gly Ile Leu Ala Gly Leu Leu Tyr Arg Leu Asn Thr Phe Gly Val
180 185 190

Arg Arg Leu Lys Phe Pro Glu Phe Ala Thr Ser Leu Phe Ser Gln Leu
195 200 205

Ser Leu Pro Phe Ser Ser Asn Pro Tyr Gln Gly Leu Pro Ile Thr Glu
210 215 220

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Asn Asp Gly Ser Ile Pro Ser His Gln Ala Arg Gln Ile Glu Asp Ala  
225                230                235                240
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Arg Thr Ala Thr Gln Asp Pro Thr Glu Ser Ser Ile Ala Ala Leu Val
245 250 255

118

260 265 270
 Asn Tyr Asp Val Asn Leu Ala Ser Asn Ile Leu Leu Glu Ala Gln Ala
 275 280 285

Leu Gln Gln
 290

<210> 81
 <211> 294
 <212> PRT
 <213> Glycine max

<400> 81

Met Asp Ser Ser Cys Val Pro Asn Gly Asp Val Ser Gly Phe Lys Asp
 1 5 10 15

Lys Glu Pro Met Val Asp Pro Phe Leu Val Glu Ala Leu Gln Asn Pro
 20 25 30

Arg His Arg Val Thr Ile Leu Arg Met Glu Leu Asp Ile Gln Arg Phe
 35 40 45

Leu Asn Asn Ala Asp Gln Gln His Phe Glu Phe Gln His Phe Pro Ser
 50 55 60

Ser Tyr Leu Arg Leu Ala Ala His Arg Val Ala Gln His Tyr Gly Met
 65 70 75 80

Gln Thr Met Val Gln Asp Asn Gly Phe Asn Gly Gln Gly Thr Arg Ile
 85 90 95

Met Val Arg Lys Ile Ala Glu Ser Arg Tyr Pro Val Val Cys Leu Ser
 100 105 110

Glu Ile Pro Ala Lys Gln Leu Glu Asp Asp Lys Pro Glu Gln Ile Lys
 115 120 125

Ile Ala Ile Arg Pro Arg Gln Asn Lys Asn Ser Leu Asn Glu Ala Gly
 130 135 140

Arg Lys Ser Asn Pro Leu Arg Ser Val Glu Glu Arg Lys Glu Glu Tyr
 145 150 155 160

Asp Arg Ala Arg Ala Arg Ile Phe Ser Ser Ser Arg Ser Cys Asp Ser
 165 170 175

Asp Asp Thr Leu Ser Gln Thr Phe Thr Asp Glu Lys Asn Ser Leu Ile
 180 185 190

Ile Lys Asp Glu Asn Glu Thr Ser Lys Thr Pro Val Val Asp Ser Glu
 195 200 205

Gln Cys Thr Val Gly Arg Asp Ile Ser Ser Thr Arg Val Ala Ile Leu
 210 215 220

119

Pro Leu His Val Asp Arg Ala Ser Gln Asp Phe Ser Ser Gln Gly Gln
 130 135 140

Gln Gln Asn Arg Gly Pro Gly Ala Ala Gln Ala Pro Glu Glu Asp Lys
 145 150 155 160

Ser Lys Lys Tyr Gln Ala Thr Leu Gln Leu Ala Gln Asn Leu Leu Leu
 165 170 175

Gln Leu Gln Gln Arg Gly Ser Gly Asn Gln Ser
 180 185

<210> 85
 <211> 258
 <212> PRT
 <213> Zea mays
 <400> 85

His Ala Ser Asp Pro Thr Glu Phe Ile Leu Glu Thr Leu Glu Gln Ser
 1 5 10 15

Asp Pro Gln Ser Leu Ile Gln Tyr Leu Ala Tyr Gln Asp Leu Cys Val
 20 25 30

Val Ser Glu Cys Asn Leu Glu Pro Trp Arg Arg Ala Ala Phe Phe Glu
 35 40 45

Glu Ser Gly Glu Thr Tyr Arg Arg Ile Val Thr Ala Cys Leu Lys Pro
 50 55 60

Leu Glu Glu Phe Thr Ser Lys Ile Ala Glu Ala Leu Glu Gly Phe Ser
 65 70 75 80

Ser Asp Gln Pro Glu Leu Met Leu Gln Gln Ser Arg Leu Phe Ser Ala
 85 90 95

Phe Asp Asp Ser Gln Ile Cys Thr Trp Cys Ala Arg Thr Leu Ala Gly
 100 105 110

Leu Thr Ala Arg Ser Arg Lys Glu Asp Arg Tyr Gly Val Ala Gln Leu
 115 120 125

Thr Gly Cys Asn Ala Ala Val Met Thr Thr Leu Leu Ser Ala Leu Val
 130 135 140

Ala Ile Glu Thr Cys Leu Gly Lys Lys Thr Asn Pro Gln Pro Val Arg
 145 150 155 160

Ser Leu Gly Pro Glu Asn Ile Arg Trp Thr Asn Leu Ser Thr Gly Arg
 165 170 175

Lys Gly Asn Gly Val Ala Ile Ala Ser Thr Gln Lys Ser Gly Leu His
 180 185 190

Lys Lys Ala Tyr Ile Met Ala Asp Val Leu Arg Thr Ser Val Tyr His

195 200 205

Ile Leu Ser Ala Phe Ile Asp Asp Leu Gln Ala Asn Ala Lys Pro Ser
210 215 220

Ser Leu Glu Lys Asn Trp Ile Ser Glu Gly Arg Lys Pro Val Tyr Gly
225 230 235 240

Ser Gln Ala Val Leu Val Gln Lys Leu Ile Leu Phe Ile Glu Tyr Arg
245 250 255

Ala Val

<210> 86
<211> 288
<212> PRT
<213> Zea mays

<400> 86

Gly Leu Glu Glu Glu Asp Gly Glu Glu Ala Ala Pro Ala Ser Pro Trp
1 5 10 15

Ala Glu Ala Asp Ala Gln Ala Gly Gly Ala Glu Ala Gln Thr Glu Val
20 25 30

Leu Gly Ala Gly Glu Pro Asp Leu Glu Ser Lys Ile Val Ala Ile Arg
35 40 45

Asp Phe Leu Glu Asp Pro Asn Gln Pro Glu Asn Glu Leu Val Ser Leu
50 55 60

Leu Gln Asn Leu Ala Asp Met Asp Val Thr Tyr Asn Ala Leu Gln Glu
65 70 75 80

Thr Asp Ile Gly Arg Gln Val Asn Gly Leu Arg Lys His Pro Ser Ala
85 90 95

Glu Val Arg Arg Leu Val Lys Gln Leu Ile Arg Lys Trp Lys Glu Ile
100 105 110

Val Asp Asp Trp Val Arg Leu Asp Asn Ser Gly Gly Asp Gly Ser Ala
115 120 125

Ser Val Met Thr Asp Gly Asp Ser Pro His Lys Ile Gln Gly Arg Ser
130 135 140

His Gln Ser Pro Arg Val Ser Gly Phe Gln Tyr Ser Pro Ser Pro Gln
145 150 155 160

Arg Phe Asn Gly Ser Thr Ser Glu Met Ala Asn Asn Gly Phe Glu Ser
165 170 175

Thr Met Asp Ala Lys Arg Arg Ala Ser Pro Val Pro Ala His His Asn
180 185 190

